

**PARTS
OTTO
OTTO
PARTS**

CORVAIR

ENGINE & TRANSAXLE PARTS



DEDICATED TO THE
IMPROVEMENT, PRESERVATION & PERFORMANCE
OF THE CORVAIR

9659 REMER STREET
SOUTH EL MONTE, CALIF. 91733
ORDER DESK PHONE (818) 579-5875

\$4.00

PRICING:

All prices are F.O.B. South El Monte. Prices and specifications are subject to change without notice.

TERMS:

Full payment including shipping cost must accompany order. Send money order or certified check. Personal checks will delay orders 3-4 weeks while check is cleared through our bank. There is an additional \$3.00 handling charge on orders less than \$20.00. You can also charge your mail order using your VISA, or MasterCard. Simply send in your card number and expiration date. There is a 4% Bank card service charge.

SHIPMENTS:

All orders are shipped by United Parcel Service. If you specify another carrier, add \$5.00 for special handling to the rates for that carrier. Weights shown in catalog are shipping weights, which are to be used in figuring shipping cost from schedule provided. All items shipped will be insured against damage. Intransit damage claims should be made against the carrier. Replacement parts may be ordered from us. Most orders are shipped within two working days after receipt of order.

PHONE ORDERS:

We welcome your phone orders. You will talk to a product knowledgeable person, who can help you select the proper parts to achieve your objectives. We will not accept collect calls.

C.O.D. ORDERS:

All C.O.D. orders will come cash only unless prior arrangements have been made. A service charge of \$2.50 will be added to the shipping cost.

RUSH ORDERS:

We can ship U.P.S. 2nd Day Air or Next Day Air. If you want your order "special handled" for same day or next day shipment there will be a \$5.00 special handling charge.

TECHNICAL CONSULTATION:

If you wish to draw on the technical experience of **OTTO PARTS** in the area of engines or transaxles, to solve a unique problem, plan for a special project or design an engine for specific results. You can make an appointment to speak with a qualified person. The fee is \$25.00 per half hour, \$25.00 minimum.

RETURN OF MERCHANDISE:

There will be a 20% handling charge on all returns. This includes exchange! You must have a "Return Goods Authorization" Number. You will need the invoice number in order to receive an R.G.A. Number, which must be displayed outside of your package. After receiving your authorization, you must ship the goods within 5 working days. Be sure to include complete information on the problem encountered plus invoice number, and phone number. We will not accept collect shipments.

WARRANTY:

OTTO PARTS warrants that all parts supplied by us will perform as specified when installed properly and instructions are carefully followed. **OTTO PARTS** will rework or replace at our discretion any product determined by us to be faulty or defective in material or workmanship. The full extent of this warranty is the product supplied by **OTTO PARTS** and does not include any other loss, failure, or related damage. **OTTO PARTS** is not liable for labor costs incurred to replace defective parts. If you suspect there is something amiss with an **OTTO PARTS** product, contact us **BEFORE** tampering with it. Tampering with or modifying an **OTTO PARTS** product will void the warranty.

CATALOGS & DECALS:

If your catalog is out of date, you may obtain a new catalog at no charge by requesting a new catalog along with your order. We also have **OTTO PARTS** and **TRANSVAIR** decals which we will send to you free if you request them along with your order.

CORE AND TOOL DEPOSIT POLICY:

All deposits are subject to a 30 day term from date shipped to customer. Any deposit not claimed within 30 days will be considered a buy-back at one-half original deposit. You can extend a rental by sending rent payment prior to expiration.

**OTTO
PARTS**

Introduction

OTTO PARTS. Corvair Hi-Performance equipment is designed for the enthusiast who demands better performance and extended reliability from this unique engine.

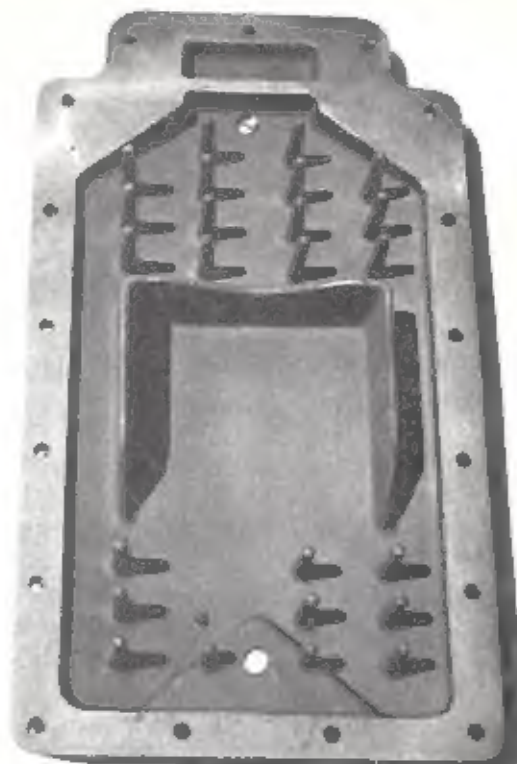
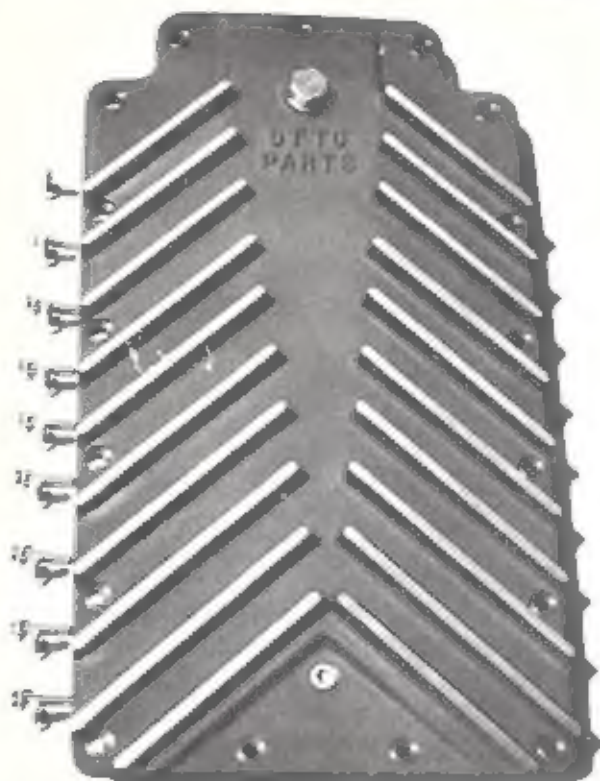
Each item has been carefully engineered and manufactured from the best materials available.

While a policy to provide the highest quality product DOES NOT often yield the lowest price, it DOES always yield a more satisfied customer over a greater period of time. Fully aware that many persons always purchase lesser priced merchandise, we feel that this sacrifice is well justified to provide a superior product for those who can only be satisfied with a quality product. We will continue to be as competitive as quality and your best interests will permit.

**OTTO
PARTS**

ULTRA-COOLER OIL PAN

Fits all Corvairs



Scientific fin placement puts air flow to work, reducing oil temperature as much as 50°F when used with the matching rocker-arm cover set. Full 314 square inch cooling area (170% of stock area) is aided by sand blasted and black anodized finish to radiate maximum heat into the air flow. Baffle construction permits stock pick-up location, prevents pump starvation during hard cornering, and supplies coolest oil to pump. The three high baffles and 24 posts extend into the hottest layer of the oil, capturing heat and conducting it directly to the cooled exterior surface. The pan adds only one pint of oil capacity to the engine, to make an even 5 quarts, keeping the cost of changing oil to a minimum. To keep ground clearance to a reasonable figure, the pan is a mere 3/4 inch deeper than the stock pan, including the fins. At the back of the pan a 1/4" N.P.T. hole is provided with flush fitting plug installed, for quick installation of an oil temperature sending unit or dry sump attachment.

This rigid cast aluminum pan also provides a girdling effect to the split crankcase halves to reduce movement at high R.P.M. that can cause bearing interference. A must for all turbo charged and modified Corvairs, a remarkable improvement on any Corvair.

Oil pan kit includes: 1 oil pan, 1 set heat treated, cad plated, self locking, flange headed bolts, 1 drain plug w/gasket, 1 temperature boss plug, 1 **OTTO PARTS** Gasket for Cast Aluminum Pan. We recommend use of **OTTO PARTS** High Performance Oil Pick-Up, Order #OP-126. Use of these parts insure maximum oil cooling and long lasting seal.

Order #OS-101

Also available with Polished Fins.

The above pan is available with an additional oil temperature sending unit boss located inside the oil pick-up baffle, to monitor temperature of oil at the pick up point.

This location is also less prone to dragging than the rear location.

Order #OS-101-A

OTTO PARTS

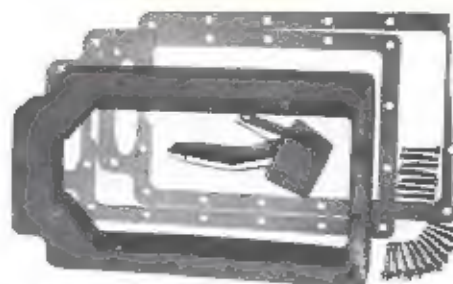
OIL PAN, BAFFLE SPACER KIT

For Road Racing & Oval Track Engines

This Baffle Spacer was developed by **OTTO PARTS** to eliminate oil loss from the sump area. When the Corvair engine is subjected to sustained high "G" forces or extreme chassis angles, the oil escapes to the cylinder head, starving the oil pick-up.

The baffle extends out over the pan and the parabolic ramp diverts fast moving oil back into the pan area. The spacer with gaskets is $\frac{3}{4}$ " thick putting more of the oil below the gasket surface of the engine, where it can be effectively controlled by the baffle ramps. For best oil control we recommend you recalibrate your dip stick to the same oil volume you had *without* the baffle spacer. However, if you fill to the original full mark on the stick it will add (1) quart.

The baffle spacer also contributes to additional oil cooling. The parabolic shroud exposes 54 square inches of heat conductive aluminum to the hottest oil. Unquestionably, the ultimate solution to oil washout and pump starvation. This design will work the best



when used with an **OTTO PARTS** oil pan which has baffles to keep oil in the pick-up area. In order to assure the best results, this baffle spacer is sold with Hi-Performance oil pick-up. You must specify the make of pan you will use, or provide measurements from gasket surface to the highest object in pick-up area.

1. Baffle Spacer (Black Anodized)
2. Hi-Performance Oil Pick-up
3. Two Gaskets, for Cast Aluminum Covers
4. Heat Treated, Self Locking Bolts

Order #BS-133

OIL PICK-UP.....Hi-Performance



This practical and effective oil pick-up is available for both the **OTTO PARTS** Pan and all Brand 'X' Pans.

This more-functional pick-up is $\frac{5}{8}$ " closer to the pan-bottom when fitted to an **OTTO PARTS** Pan and considerably more on deeper Pans.

If you have a Brand 'X' Pan (and specify the brand) we adapt the pick-up tube to that pan to obtain the benefits below.

As the cooling effect of outside air affects oil for only a limited distance, the coolest oil is obviously "within the first $\frac{3}{8}$ " from the Pan bottom.

The **OTTO PARTS** Hi-Performance Oil Pick-up promotes a more effective oil turnover in

the pan because the pick-up is closer to the pan bottom. As a result, oil cooling is increased! The relocated pick-up is even more important for deep pans, because the stock pick-up does not enhance oil turnover.

All models of the pick-up maintain this critical spacing. The configuration of the head minimizes wash-out of the oil on high "G" turns. A rigid support strut fastens directly to the pick-up head, eliminating any fatigue which might otherwise result from vibration of an unsupported structure. This strut also accurately positions the head relative to the pan bottom.

OTTO PARTS PAN

Order #OP-126

HECO or EELCO 2 qt. Pan

Order #OP-127

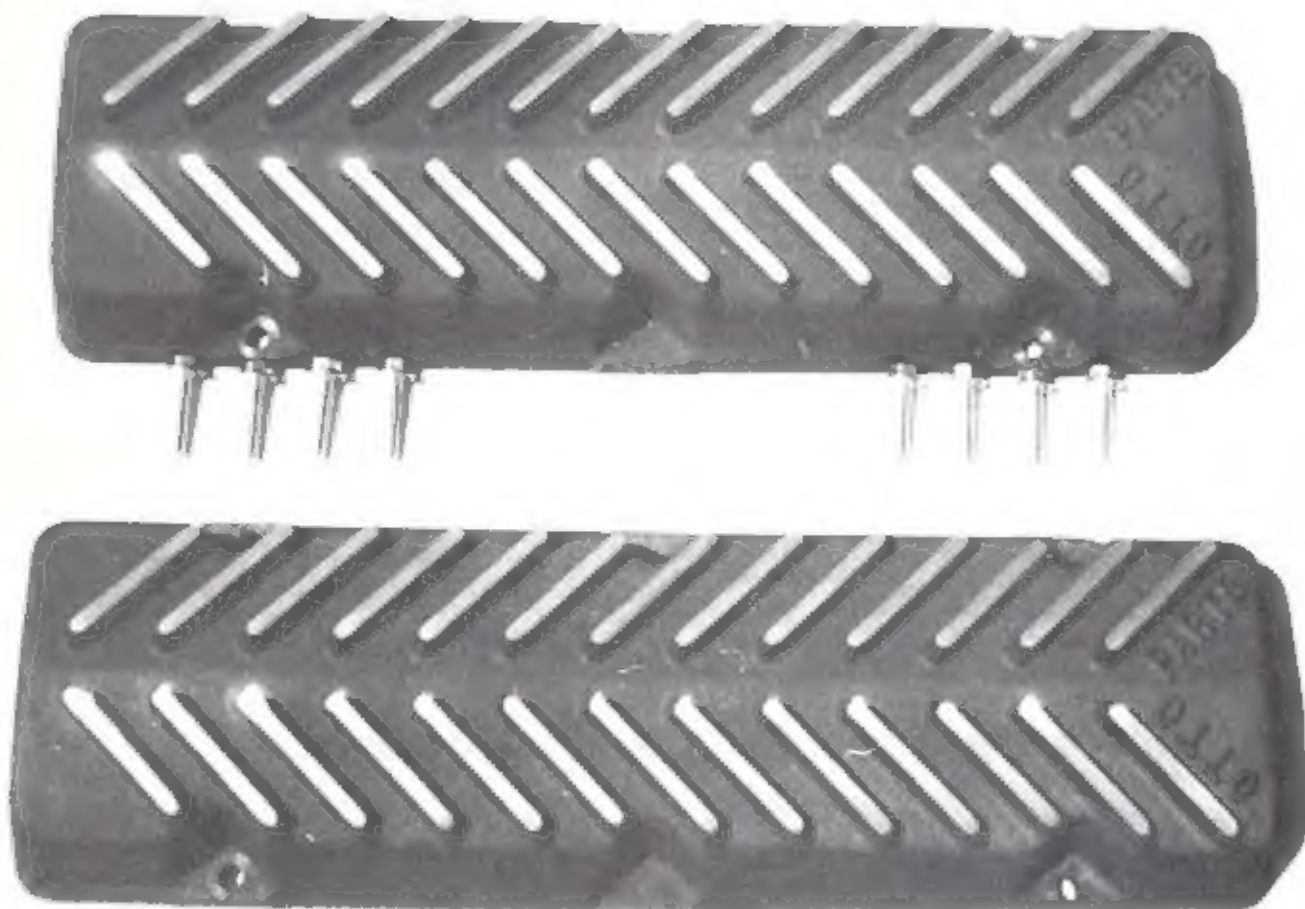
No name 2 qt. Pan (as sold by Warshawsky, Whitney and others)

Order #OP-128

Note: You must, either specify brand of Pan, or measure from gasket surface to pan floor or highest point in pick-up area and submit measurement.

OTTO PARTS

ULTRA-COOLER Rocker Arm Covers



These covers are of the same unique fin design as the oil pan. They provide 316 square inches of sand blasted, black anodized cooling surface, and radiate maximum heat from the cylinder heads, where some 90% of the engine heat is created. These covers will reduce head temperature and can reduce detonation caused by heat.

The hottest oil leaves the cylinder head and returns to the oil pan where your Ultra-Cooler Oil Pan will minimize oil temperature to give optimum engine life.

The Ultra-Cooler Oil Pan and Rocker Covers are unequalled in effectively reducing oil temperature as much as 50°.

This combination, the Ultra-Cooler Oil Pan and Valve Covers are all that is generally required to keep engine and oil temperatures at a reasonable figure.

Ultra-Cooler Rocker Arm Cover Set includes:
two covers, one set heat treated, cad plated, self locking, flange head bolts, two **OTTO PARTS** Gaskets for aluminum covers.

Four hole bolt pattern
Order #RC-102-4

Six hole bolt pattern
Order #RC-102-6

Also Available with Polished Fins.

**This Space is Reserved for
New Products Now in Development**

SHAKE PROOF BOLT KIT

Crankcase Cover & Oil Filter Adaptor

The most overlooked oil leak problem on the Corvair Engine is around the Crankcase Cover.

The reason for the Cover not holding a seal is inadequate bolts that just don't hold. The Stock Bolts used for the Cover are soft and have a small bearing surface (no flange) with no provision for locking. They will frequently loosen even when torqued to the factory specs.

Both Crankcase Cover and Oil Filter Adaptor are subject to stress and vibration from Blower Fan, Alternator and Idler Pulley, requiring them to be held securely with quality Shake-proof Bolts.

You can prevent these failures with the **OTTO PARTS Bolt Kit** that has; Flanged Shake Proof Head design and are heat treated.

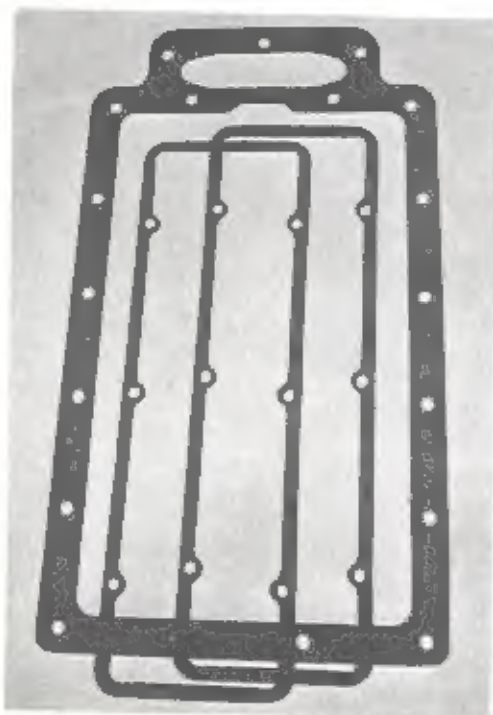
Tested and proven effective Kit contents: (1) 21 Bolts to install Crankcase Cover and Oil Filter Adaptor. (2) Instruction Sheet.

Order #BK-159

Shipping Wt. 2 lbs.



OIL PAN & VALVE COVER GASKETS



For a long lasting trouble free seal, the proper gasket material must be used. **OTTO PARTS** has evaluated these needs for the different types of covers commonly used on the Corvair. With **OTTO Pan & Covers** all gaskets surfaces are machined and they are very rigid (Do not warp or flex) so a high quality high pressure gasket material is used. For **Brand-X** type covers most are not machined on the gasket surface and are not as rigid. The thick stock gasket tends to fatigue and leak. For this application we offer a thin rubberized cork gasket. This is also the best gasket for **OTTO Covers** on warped cylinder heads. (Check gasket surface with straight edge). For **Stock Covers** we offer a high compliance rubberized cork gasket for a long lasting seal.

OTTO PARTS also offers these choices in our engine gasket set Part #RS-112. Many customers want spare gaskets handy for valve adjusting or oil pan cleanout. See Price List for quantity discount.

Specify Type of Covers in addition to P/N

Rocker Cover Gaskets

Order #CG-111

Oil Pan Gaskets

Order #PG-111

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PRO-FLOW OIL PUMP KIT



The stock oil pump in the Corvair engine is marginal in volume under the best conditions. As clearances increase through normal use and more oil is passed at each lubricating point, the stock pump is unable to keep up with the oil supply required. The results are reduced lubrication in several critical points in your engine. The 4th main bearing and rod bearings #5 & 6 are the first to fall short in required volume. In even a new engine when at full operating temperatures, the stock pump cannot properly lubricate the valve gear at engine speeds below approximately 2,000 RPM. This condition contributes to increased valve guide wear and rocker arm failure.

The Pro-Flow Oil Pump Kit has 50% longer gears which provides 133% of stock pump output. Special quality features are the gear cover that provides bearing bores to locate the gear shafts on the outboard end to eliminate side scrub between gear and housing. The spacer and the bearing cover are machined from solid bar stock not cast aluminum. Both of these features are unique to the **OTTO PARTS** Pump and not offered with other pumps.

The improved oil flow will help keep engine temperatures down and provide adequate lubrication under all conditions. For extended engine life and reliability this Oil Pump should be a top priority for all Corvair engines.

Pro-Flow Kit Contents:

1. (One) gold anodized gear spacer.
2. (One) gear set with hardened driveshaft.
3. (Six) 1/4-20x1" grade 5 self locking bolts.
4. (One) length of PR-1 Plasti-gage.
5. (Four) gaskets .003", .005", & .008" thick.
6. (Two) 3/32"x5/8" "Rel-pins" for doweling the spacer to the accessory housing.
7. New idler gear shaft to match the longer gear.
8. Illustrated instruction.
9. Special driving gear and shaft assembly.
10. Bearing cap, pump cover.

We urge you to compare quality and kit contents before buying any other Corvair Oil Pump.

Order #PF-108

**OTTO
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CAMS FOR CORVAIRS

The cam is the heart of your engine. Why settle for the compromise performance of a stock cam when you can have a cam which will perfectly compliment your driving needs and modifications (if any) you have made to your engine? Why let your car's performance depend on your local cam grinder's luck or black magic? With **OTTO PARTS**, you benefit from the latest technology of computer developed cam profiles matched to best compliment the air flow balance in the Corvair cylinder head. The result is a broad power band for better overall performance.

With our special series of profiles, (for normally aspirated engines **OT-10 thru OT-50** and for Turbos **TB-10 thru TB-50**) there is an **OTTO PARTS** camshaft for your performance objective, be it the ideal street engine or all out competition.

The Cam profile determines the performance characteristics. This cannot be determined by advertised specs or Cam checking specs.

A Cam should be chosen based on known performance from a given profile combination. To get the Cam that is ideal for your objectives why not tell us what you want in performance and we will select the Cam that provides the results you want. Just fill out the Cam selection form on the back of our order blank and send it along with your order.

Series numbers 10 thru 30 are available in regrinds from our stock, use order #RG-115. Numbers 40 & 50 are ground on billets only, order #PB-116.

PERFORMANCE OUTLINE

TB-10 and OT-10

This is the ideal replacement for the Stock Cam where both performance and economy are important. Results are broader powerband and better driveability. It works great even with a powerguide and good pulling power for heavy loads as with the truck.

TB-20 and OT-20

A good choice for the enthusiast who wants more performance but does not want to give up good driveability for the street. Little change in low end performance, big improvement in midrange power.

TB-30 and OT-30

All around performance with power band starting between 2,000 and 2,500 R.P.M. Big on mid power. The top end will depend on which heads are used and how well they are prepared. A good choice for modified autocross cars. The ideal Cam for all around dune buggies with "140" Engines.

SERIES 40 and 50

These are all out competition grinds supplied on billets only. Consult with us on other engine and head modifications and type of competition for selection of one of these Cams.

Regrind Camshaft
Proferal Billet Camshaft
12 Pair Valve Locks
12 Pair Heat Treated
Valve Locks

Order #RG115
Order #PB116
Order #VL120
Order #TL-122

HYDRAULIC LIFTERS FOR CORVAIRS

There are none better for the Corvair application than the **OTTO PARTS** Lifters. We purchase these lifters direct from the manufacturer so we know they are of the correct design to work properly in the Corvair and they are the same length as the original Corvair tappet. In service you can expect quick "cold start" pump up and reliable operation in stock or performance application. It should be noted here that at high R.P.M. a hydraulic lifter requires proper spring pressure to function properly. For proper spring selection see P/N DS-118 and OS-123

Order #HT-117



**OTTO
PARTS**

STOCK VALVE SPRINGS

These springs are for use with stock cams and is okay with OT-10 or TB-10 cam. They test 85-90 lbs. at the seat with stock installed height. Custom manufactured from chrome silicone steel wire with flat damper. They have a higher tolerance for heat than the stock spring and will retain acceptable spring tension much longer than stock carbon steel springs. Beware of cheaper springs they may be made with carbon steel wire which will tension fade fast in an air cooled engine

Order #DS-118



PERFORMANCE VALVE SPRING



These springs are for use with cams up to .450" lift. They fit the stock spring seat. Made from chrome silicone steel wire with flat damper, for long spring life. Recommended for use with OTTO PARTS OT-20 or TB-20 cams. They test 105-110 lbs. at stock installed height.

Order #DS-118-HP

DUAL VALVE SPRINGS

This spring should be used with cams up to .490" lift. They are custom manufactured from chrome silicone wire, progressive wound to give moderate seat pressure along with adequate pressure for higher lift cams. With this progressive rate they are also an excellent choice for cams with less lift, for maximum spring life. Seat pressure is 110 lbs. at stock installed height. Recommended for use with OTTO PARTS OT-30 and TB-30 cams. Installation of these springs requires slightly enlarging the spring seat bore to blend with the existing bottom. This can be done with the cutter we offer on a rental basis and a slow speed drill motor. You will also need the OS-124 retainers

Order # OS-123



HIGH LIFT DUAL VALVE SPRINGS

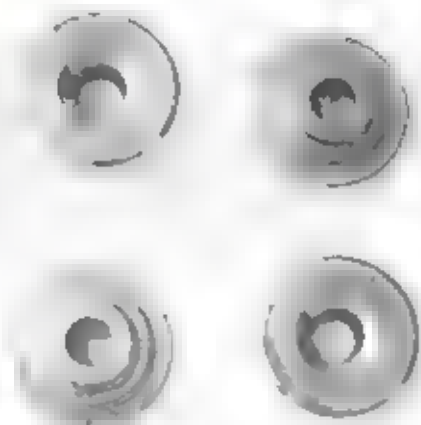


This spring should be used with cam lifts 500"—.580 lift. It should not be used on lesser cams. Custom manufactured from chrome silicone steel wire for reliable service. Pressure at the seat is @ 125 lbs. Recommended with OTTO PARTS OT-40, TB-40, OT-50 & TB-50 cams.

Order #OS-123-HP

**OTTO
PARTS**

OVERSIZE RETAINERS



These retainers are hard anodized aluminum to go with the OS-123 dual valve spring. We do not recommend aluminum retainers on springs with flat dampers like the stock springs because the floating flat damper eats the aluminum. This problem does not exist with the dual spring.

Order #OS-124

VALVE SPRING SHIMS STAINLESS STEEL

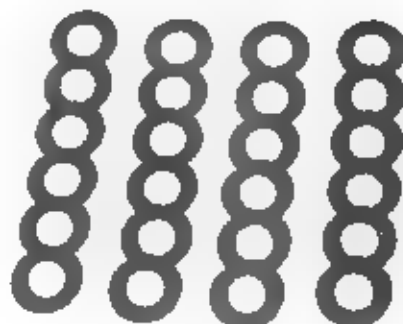
Proper spring height should be set when assembling your heads to insure proper valve train performance. After market shims do not always protect the head from being gouged by the flat damper. The feature of making them from stainless is that it slows the transfer of heat from the head to the valve spring. Less heat transfer results in reduced tension fade.

This shim is designed to fit over the large head OTTO PARTS guides.

Each Kit Includes: 12 ea. .035" & 12 ea. .022"

For Stock Diameter Springs Order P/N SS-160

For OS-123 Springs Order P/N SS-160-OS



**This Space is Reserved for
New Products Now in Development**

HEAVY DUTY TAILORED PUSH RODS

One of the most neglected details in engine rebuilding is proper pushrod length. We find that most people pass over this important adjustment because of the time consuming complexity and special tool requirement of determining the correct length to establish proper rocker arm geometry.

The most important requirement for a pushrod is that it is stiff enough to open the valve at the cam lift rate without deflecting and therefore delaying effective valve opening. The stock pushrod does not meet this requirement even with a stock cam. The **OTTO PARTS** Pushrods are three times stiffer than stock pushrods by actual compression test.

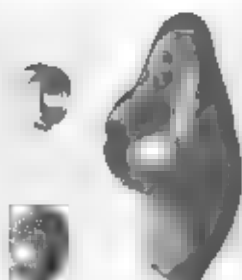
OTTO PARTS can supply corrected pushrod lengths if you supply amount milled from head and cam lift. Also note if the tappets you are using are a different length than stock.

You will improve your performance, valve guide life, rocker arm wear, and reliability with **OTTO PARTS** heavy duty tailored pushrods.

Order #PR-162

Available in; std minus .020, .040, .060, .080, .100

MATED ROCKER ARM SETS



Includes: 12 rockers, balls and nuts
Order #RA-163

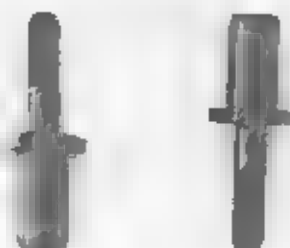
When rebuilding your engine the rocker arms should be inspected for valve stem deformation in the toe of the rocker. This condition will cause excessive valve guide wear and rocker noise. The ball seat should also be inspected for wear, evidence is thinner metal in the slot area. Any ball seat that has score lines, galling evidence or bending of the metal should be discarded. Cracks in the rocker normally start around the rocker stud slot.

The common problem with new rockers is that they frequently fail to seat to the ball. Those that do seat dissipate a good deal of metal into the oil during this process. **OTTO PARTS** premates the ball to the rocker for quick reliable break-in. TRW rocker arms are used.

ROCKER ARM STUDS

This part is subject to fatigue and difficult to evaluate for reuse. A magnetic particle inspection will reveal any parts that have surface fractures, but it will not determine the fatigue life of the part. Considering the cost of inspection versus replacement cost, replacing the rocker stud is the safe choice for a reliable engine.

Order #AS-150 each



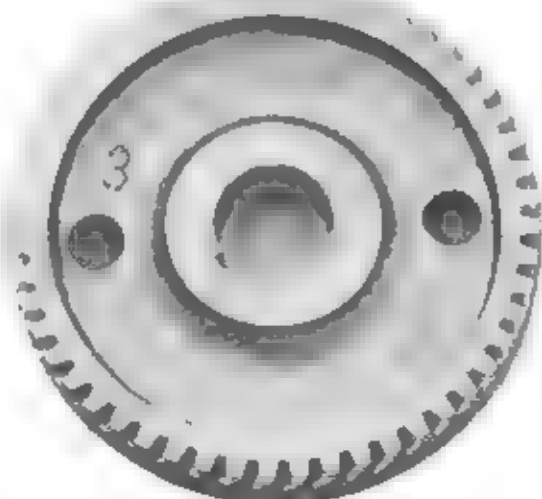
**OTTO
PARTS**

STOCK CAM GEAR

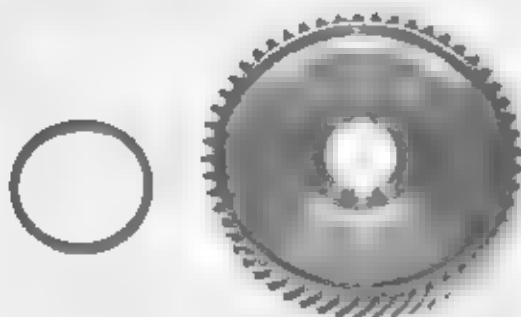
For reliable service a used cam gear should not be reinstalled. We have seen many failures due to this practice. The gear is secured to the cam only by the interference fit. It has taken a set to the first shaft and is not likely to hold if removed and reinstalled. See also the article on crank hubs, our P/N SH-129.

Many new gear failures are due to improper installation of the cam gear. If you are ordering a cam you can have the gear properly installed here at OTTO PARTS.

Order #NG-125



FAILSAFE CAM GEAR



The OTTO PARTS Failsafe Cam Gear is designed to give you the ultimate in high precision reliability. Precision machined from solid aluminum bar stock to provide high strength and low wear. The unique shrink ring design is an OTTO PARTS original design that has proven reliable in holding the gear securely to the cam. Even with strong dual springs and .550" lift.

Any application with stronger than stock valve springs and higher than stock lift should use this failsafe cam gear. The quality and service life justify the cost in even a stock rebuild.

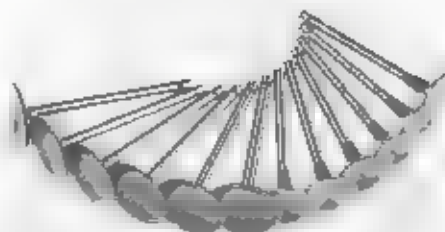
Order #FS-126

CAM THRUST WASHER W/KEY

It is good practice to replace these inexpensive parts when replacing your cam gear.

Order #TW-119

ENGINE VALVES



Order
 #IV 177
 140 Intake Valves
 #EV 178
 140 Exhaust Valves
 #IV-179
 110 & all early Intake Valves
 #EV180
 110 & all early Exhaust Valves

Proper inspection is very important in determining whether or not to reuse the valves. While head land and keeper groove condition are important, the stem diameter is often overlooked. Bear in mind that a close stem to guide fit are essential for a long lasting valve to seat seal. A loose guide to stem fit lets the valve scrub into the seat each time it closes and wears out both valve and seat prematurely.

The standards we use at OTTO PARTS are; with a complete rebuild for long service life the minimum stem diameter, intake and exhaust, should be no less than .340". For a valve guide and grind only with a complete rebuild to follow later, the minimum should be held to .340". Be sure to mike along the wear area in two planes to find the point of greatest wear. If your valves are under these specs replace them. It may seem expensive now but it is cheap insurance in the long run.

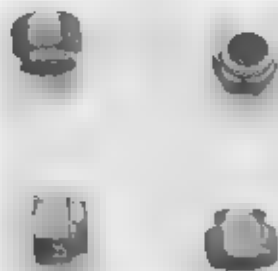
Our primary stock is TRW valves, when this is not available we will send Sealed Power. Both are excellent quality.

FRICTION NUTS, VALVE ADJUSTING

The nut must be tight to the stud if it is going to hold adjustment. The friction nuts offered here are of different design and have more compliance to thread size than the stock nut. In most cases they will hold tight when the old nut will not. 12 are required for a complete engine.

Set of 6 Nuts

Order #FN-151



PUSH ROD TUBES

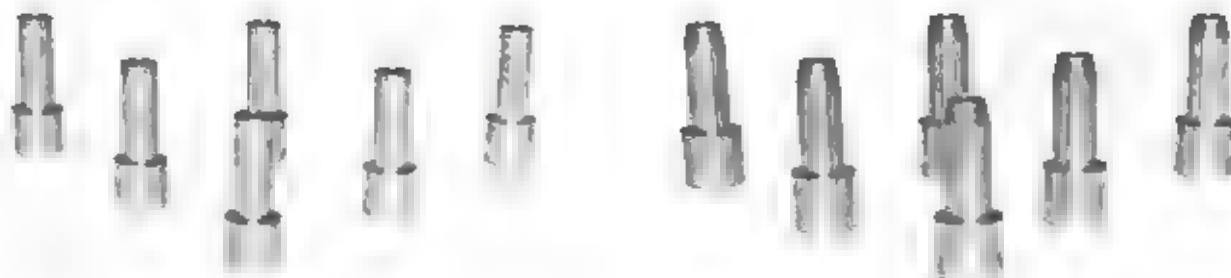


Any bent or deformed tube should be replaced. Inspect carefully the condition of the O-ring grooves. Deformed or scored grooves can lead to oil leaks.

Order #RT-158

**OTTO
PARTS**

VALVE GUIDES, ALUMINUM BRONZE



The unique **OTTO PARTS** valve guides are made from aluminum silicon bronze. The exclusive head design and the material provide maximum stability and heat dissipation, for best valve stem control.

Manufactured to precision tolerances for easy installation and close stem to guide fit. The intake guides have a tapered "flow cone" design on the port end of the guide to promote better flow around the valve and stem.

Many times replacement of the guides is neglected, often a patch job such as guide knurling which reverts back to original condition in approximately 1,000 miles, or bronze walls of the stock guide which inevitably results in cracked guides are recommended at your local shop.

With the **OTTO PARTS** removal and installation tool rental service it is easy to replace your own guides and enjoy the satisfaction of a job well done. With the savings on outside labor costs you can have aluminum bronze guides for about the same price as having stock steel guides or bronze walls installed at a local shop.

It is important to note that the wear rate of the valve guides is the product of several factors. Probably the most important of these is the material chosen for the guide and adequate lubrication. It seems that many so called experts prescribe valve stem seals to prevent passage of oil through the intake guides and into the combustion chamber. While oil control here is important, sealing the guide from lubrication is not the best long term solution. As valve stem seals result in increased valve guide wear. The best solution is controlled lubrication thru close stem to guide fit. For this reason the **OTTO PARTS** guide is superior to other bronze guides thru design and close tolerance fits. If you want a valve guide that will give you the best valve and seat life, then clearly you will want to install these guides. They are competitively priced.

Order

#IG-131 (Set of 6)

INTAKE GUIDES WITH INSTRUCTIONS

#EG-131 (Set of 6)

EXHAUST GUIDES WITH INSTRUCTIONS

#GT-131 GUIDE INSTALLATION TOOLS

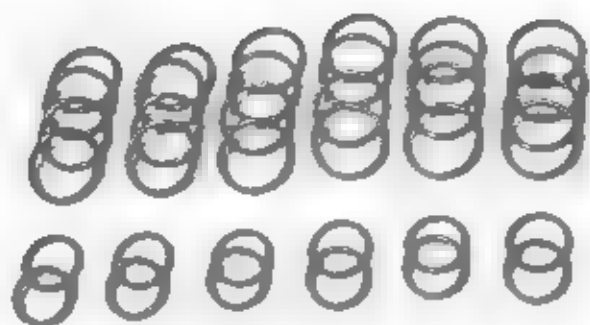
#IG-131-10 OVERSIZE INTAKE GUIDES

#EG-131-10 OVERSIZE EXHAUST GUIDES

#IT-131 R REMER FOR OVERSIZE GUIDES

**OTTO
PARTS**

VITON "O" RING SEALS



These Viton "O" Rings are of a specific compound of viton, selected to meet the requirements of the corvair. The critical temp rating is above 600°F and will provide a reliable seal for the life of your engine. A labor saving investment when compared to the work involved in replacing stock type seals.

Kit Includes: 36 "O" Rings; 24 Large For Push Rod Tubes, 12 Small For Lower Head Stud Seals. Does one complete engine

One Engine Set Viton "O" Rings Order #OR-114
With 2 Oil Cooler Seals Order #OR-114-0

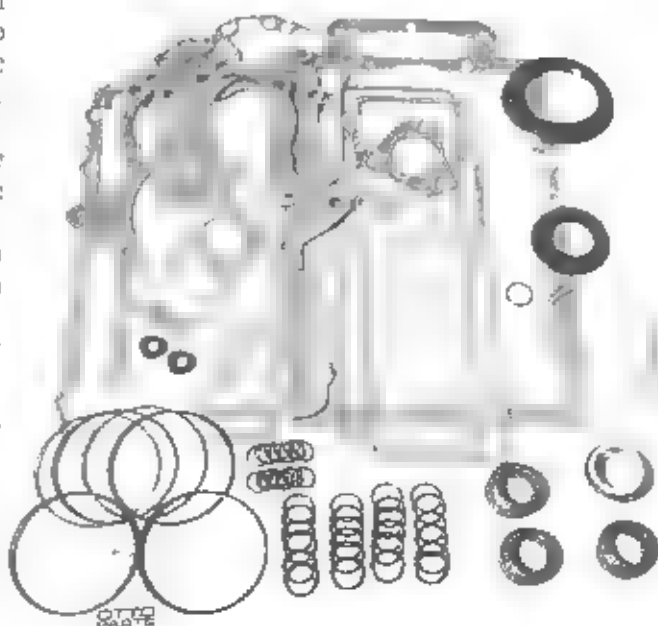
HIGH TEMP ENGINE GASKET SET

This is the highest quality engine gasket set available. It contains all the gaskets required in an engine rebuild. It even has an oil filler cap gasket not included in ordinary gasket sets. The head gaskets are **OTTO PARTS** solid copper, which allows for bore sizes up to + .060 over bore. All O-rings are high temp Viton and so are the oil cooler seals. Most of the flat gaskets are special cut on our dies from a special high compliance material that seals much better than paper gaskets. (Does not include valve stem seals, See P/N IG 131). One often overlooked item to check after a rebuild is the top cover bolts. For details see our P/N BK 159.

If you will supply the following information we will custom make your gasket set for the exact engine you are rebuilding.

Specify: (1) year of engine, (2) bore size, (3) thickness of head gasket (stock is .032), (4) type of heads (140 or other), (5) if you have an OTTO pan or rocker covers.

Order #RS-112



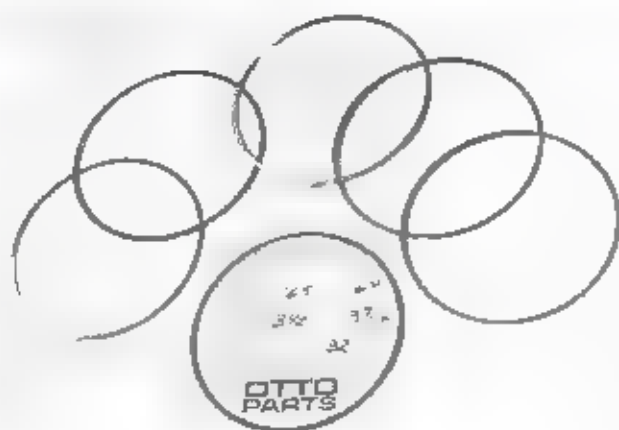
Gaskets & Seals, Separate

- SG-112-1 Oil Cooler Adaptor
- SG-112-2 Oil Filter Adaptor
- SG-112-3 Distributor
- SG-112-4 Turbo inlet
- SG-112-5 Oil Pump (2)
- SG-112-6 Oil Cooler Seals, Viton
- SG-112-7 Top Cover; Pair Only
- SG-112-8 Rear Housing
- SG-112-9 Bell Housing
- SG-112-10 Ex Manifold Packing (8) 140

- SG-112-11 Ex Manifold Packing (8) others
- SG-112-12 Bell Housing Seal (large)
- SG-112-13 Rear Housing Seal (small)
- SG-112-14 Cylinder Base (6)
- SG-112-15 Oil Filler Cap
- SG-112-16 Right Angle Adaptor

**OTTO
PARTS**

COPPER HEAD GASKETS



A solid copper head gasket is far superior to the stock folded steel type gasket. The thin metal edge of stock gaskets can result in hot spots that cause detonation and burn thru. The not uniform thickness of steel gaskets will deform the gasket surface of your aluminum heads. With solid copper you have a uniform pressure between the cylinder and head that provides a reliable seal without hot spots. Our standard gaskets are good for stock thru + .060 over bore.

Due to lower octane levels in the fuel available today, some pinging in the hi-performance and turbo charged engines is being experienced. In order to simplify a minor reduction in compression, to adjust to new fuel standards, a gasket that is .010" thicker than stock is available. Thickness is .042", stock is .032.

These head gaskets are also ideal to compensate for cylinder head resurfacing when no compression increase is desired. In many cases, .030" or more is required for a good cleanup. Due to the solid copper design you can "stack" these gaskets two high and mix or match the two thicknesses to acquire the head volume desired. This practice is also helpful when putting a turbo on hi-performance heads. Many persons overlook the fact that increased bore sizes also increase compression.

When ordering you must specify:

1. year of engine.
2. bore size.
3. thickness desired.

Kit includes: 6 solid copper gaskets and instruction sheet

Order #HG-106

HEAD NUT KIT

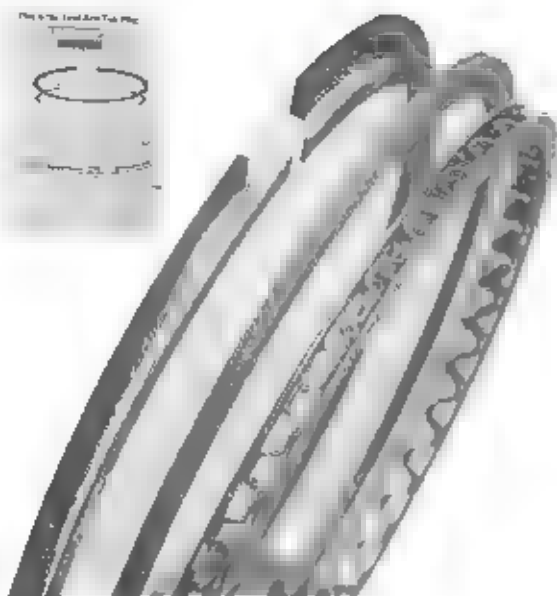
High quality flange type nuts, cad plated to retard rust. The flange is a must for reliable head torque. A used nut may have fatigued threads and is not a prudent risk for reuse. Thousands of sets have performed reliably for over ten years. Don't let inexpensive fatigued hardware spoil your otherwise quality rebuild.

Kit Includes: 12 flange type nuts, enough for one complete engine and instructions

Order #HN-107



TOTAL SEAL PISTON RINGS



High Performance Total Seal

These are the famous gapless piston rings that eliminate blowby that is common with gap end rings. Increases power, fuel economy, and ring life. Reduces friction, fuel dilution and engine maintenance. These rings are available from OTTO PARTS in all bore sizes common to the Corvair. The High Performance version of this ring is ideal for all long service street type applications. The flanks of the ring are moly coated for less ring to groove friction.

Pro Set Total Seal

The Pro Set features a moly inlaid top ring with a total seal second ring. This is the ultimate set for longest service life or high performance use. All Turbos should use this ring.

You must specify bore size and year of engine.

Each part # is 6 piston sets.

Order

#TH-155

Total Seal High Performance

#TP-156

Total Seal Pro Set

MOLY PISTON RINGS



These Rings feature a Moly Top Ring, Cast Iron Second Ring and three piece Chrome Oil Ring. The Moly Top Ring offers high thermal compatibility, quick seating to new or rehone bores, reduced cylinder drag and wear, long life sealing ability. Making them ideal for use in your Corvair and superior to Chrome Top Ring Sets.

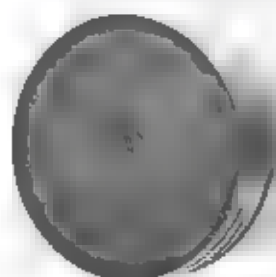
You must specify bore size and year of engine.

Each part # is 6 piston sets.

Order #MR 154

**OTTO
PARTS**

TRW FORGED PISTONS



These are the ideal piston for long service life. This Piston set should be priority for Turbo's and other hard running engines, where a high degree of reliability is required. They offer a high degree of stability with excellent wear characteristics which maintains a close piston ring to groove clearance. This contributes to long piston ring seal. A product well worth the extra cost in any engine.

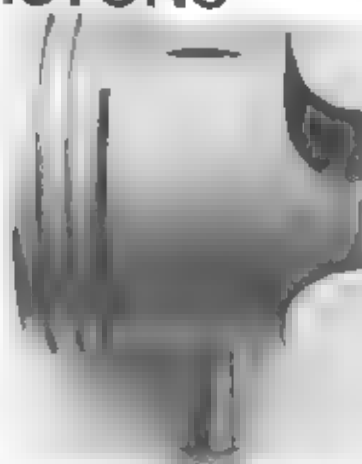
- Comes with Wrist Pins fit to Pistons
- Available for '64-'69 only
- Sizes +.020, .030, .040, .060

Order #PP 153

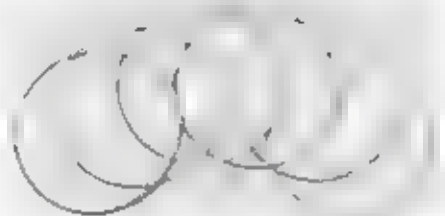
CAST ALUMINUM PISTONS

These pistons are equivalent to stock pistons. A suitable product for the budget oriented light duty engine.

Order #CP-152



COPPER CYLINDER BASE GASKETS



These gaskets will slightly lower the compression ratio. They are die cut from copper sheets .022" thick (.010" thicker than stock). They are the same thickness that GM used on air conditioned engines. A special ridge is pressed into the gasket to "insure a positive seal, even with a slight warpage in the case surface."

Each .010" thickness increase adds 1.5cc's to the head chamber volume. This equates to an approximate 225:1 compression ratio decrease in a late engine when used in conjunction with our stackable copper head gaskets, P/N HG-106. We do not recommend the stacking of base gaskets; however, with one .022 cylinder base gasket and the proper choice of our head gaskets you can reduce compression to the desired ratio.

Order #BG-174 set of 6

CYLINDER KIT

Rebored stock cylinders are maintained in stock for sale on an exchange basis. For 1960 model we stock 3 7/16" standard bore. The original bore in 1960 was 3 3/8", so this makes a '60 the same as a '61 and later standard, which can still be bored up to + .060. We must have '60 type cylinders with full circle fins for exchange.

For early engines '60 thru '63 the only piston available is a cast piston. The ones we offer are equivalent to original GM pistons.

For Late engines, '64 thru '69, we have both the cast piston and the TRW Forged piston.

All overbored cylinders should be installed with solid copper head gaskets which have a larger inside diameter to allow for the increased bore size. If you are ordering an **OTTO PARTS** High Temp gasket set P/N RS-112 you will receive this type head gasket with your order. If you bought your gasket set elsewhere you should order our P/N HG-106. The Cylinders are cleaned and sandblasted before boring. This provides an excellent surface should you want to paint them black for improved cooling.

CYLINDER KIT CONTENTS.

1. Rebored Cylinders
2. Pistons
3. Wrist Pins
4. Piston Rings

NOTE: Cylinders submitted by customer must be of the same year as those ordered and are subject to our inspection.

Cylinder Kits sold on an exchange basis only. Send in carefully packaged exchange cylinders with order.

Specify + .020, .030, .040, .060, in addition to the Part No., also indicate if substitution is acceptable in the event we are out of your preferred bore size.

Order

#LK-161-A

'64-'69 Ramco Moly Rings, TRW Pistons

#LK-161-B

'64-'69 Total Seal H.P. Rings, TRW Pistons

#LK-161-C

'64-'69 Total Seal Pro Rings, TRW Pistons

#LK-161-D

'64-'69 Ramco Moly Rings, Cast Pistons

#LK-161-E

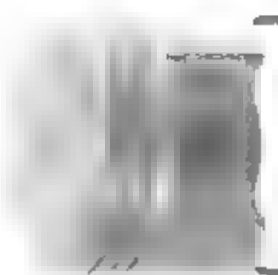
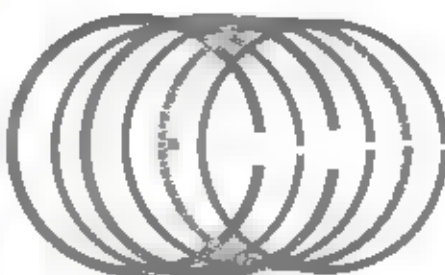
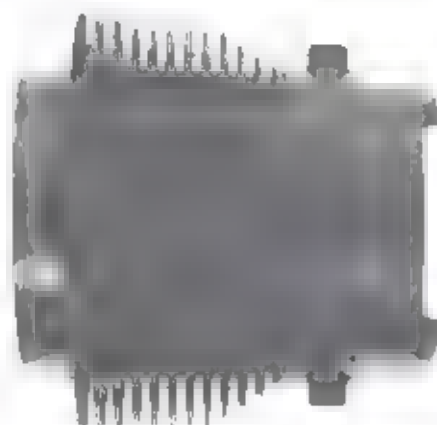
'64-'69 Total Seal H.P. Rings, Cast Pistons

#EK-161-A

'60-'63 Ramco Moly Rings, Cast Pistons

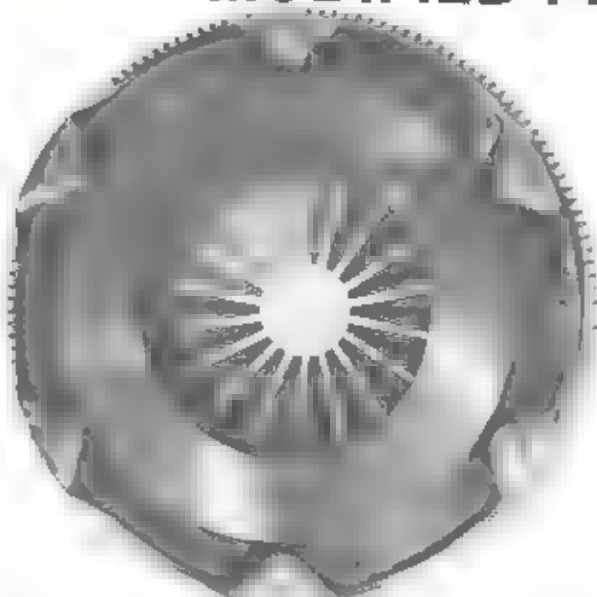
#EK-161-B

'60-'63 Total Seal H.P. Rings, Cast Pistons



**OTTO
PARTS**

MODIFIED PRESSURE PLATE



The increase in release pressure at the pedal is hardly noticeable and gives a firm chatter free engagement

Conditions For Pressure Plate Sales:

If you send the core with your order we will send you the same type & style received. If you order with core deposit we will only accept one of the same type & style you order. When ordering we must know if your core will be a weighted ('64-'69 Turbos & 140's) or not weighted (All others) Early '60-'63 & if '62-'63 Turbo weighted. If your core has a bad ring gear the price of a new ring gear installed will be deducted from your deposit, unless you ordered with new ring gear

Order #MP-207

The Pressure Plate is resurfaced and a new 1,500 lbs. diaphragm is installed which is 50% more pressure than the '65 and later high performance Pressure Plate

Pressure Plate Bolts
w/Washers (6 Ea.)

Order #PB 143

We find that the 1,500 lb. diaphragm and heavy duty disc are an ideal combination for long service life yet adequate to hold even highly modified engines

STARTER RING GEAR

Why take a chance on a used starter ring gear. A new ring gear will give smooth reliable starter drive. There is no installation charge when you are buying an OTTO PARTS pressure plate.

Order #RG-207

SPRING LOADED CLUTCH DISC

This is a new (not rebuilt) Disc with a heat resistant high R.P.M. facing that will give long service life. The spring loaded hub absorbs shock loads to the transaxle and gives smooth operation. We supply a special slightly thinner washer ring which eliminates any clearance problems between flywheel bolts & springs.

Order #MD 206

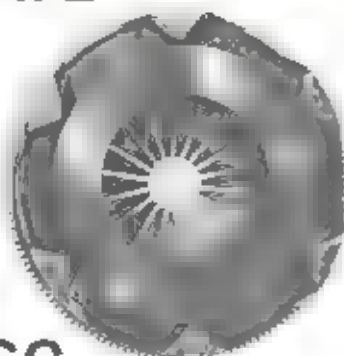


**OTTO
PARTS**

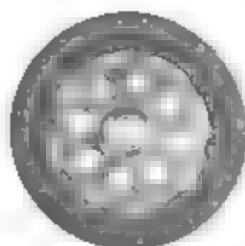
STOCK PRESSURE PLATE

This pressure plate is rebuilt to stock spec's if you have a stock engine and just want a smooth reliable clutch you would like the smooth operation of this pressure plate with the spring loaded Disc
P/N MD-206

Order #SP-208



REBUILT CLUTCH DISC



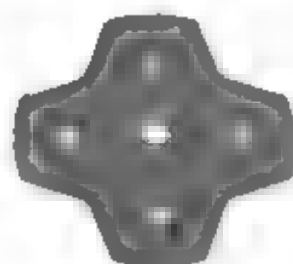
We install the same high temp facing we use on our spring loaded disc. Will outlast ordinary rebuilt discs. We feel the quality justifies the cost. Considering the labor involved to replace the disc, why take a chance on a cheap low quality disc

Order #RD-209

4 PUCK CERAMIC DISC

If you have a performance built Corvair that is a clutch killer, here is what you've been waiting for. Firm lock up every time. The 4 Puck Ceramic Disc does not require as much pressure as organic discs. Works great with our stock rebuilt Pressure Plate #SP-208. Not recommended for daily street use.

Order #CD-210

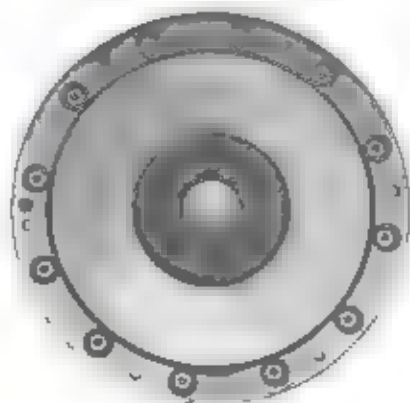


6 PUCK CERAMIC DISC

This disc is less severe than the 4 puck and is a better choice for street and competition use. If you want a soft pedal yet high performance and long life use Stock Pressure Plate P/N SP-208. If you need to couple a killer motor to large super bite tires use P/N MP-207. If you are not certain which to use call and talk it over with us

Order #SC-211

TAPER BOLT FLYWHEELS



This flywheel is an **OTTO PARTS** original, introduced in 1973. The rivets are replaced with a custom made, heat treated, **Taper Head Bolt** for long rattle free service. The inertia ring is left off to reduce flywheel weight approx. 3 lbs. The flywheel face is resurfaced and the finished assembly is trued, but should be balanced to your engine. See price list for dynamic balancing service.

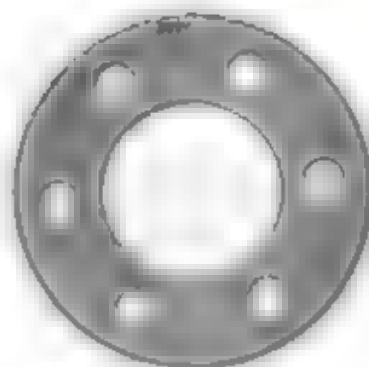
Order #MF-176

Note: All cores are subject to our inspection. We will not accept welded or previously modified flywheels

FLYWHEEL WASHER RING, IMPROVED

A problem we hear about frequently at **OTTO PARTS** on both stock and performance engines, is that the flywheel gets loose from the crank. **OTTO PARTS** has determined that the stock washer ring contributes to this problem. The bolt holes are excessively oversize and the ring is not flat around the holes. This creates a not uniform bearing surface for the bolts to bear on and can lead to the assembly working loose even when the bolts are secured with an adhesive. The loose bolt holes also effect a balanced assembly in that the weight shifts when reassembled. We also found that with a stock ring you do not have full thread engagement with the crank hub. The **OTTO PARTS** Washer Ring is a precision part made from high alloy heat treated steel. The thickness provides for full thread engagement. New bolts should be used, see P/N **FB-139**. If your application is performance oriented see P/N **CH-142**.

Order #FR 230



CLUTCH RELEASE BEARING



A new release bearing should be installed with your new pressure plate. It is unlikely that an already used bearing will last the life of your new clutch; so replace it now and save the labor of removing your engine to replace it later. For '64-'69 you may want the heavy duty, self aligning, angular contact bearing. Order P/N **TB-147-LH**

Order #TB-147-E	'60-'63
Order #TB-147-L	'64-'69
Order #TB-147-LH	'64-'69

**OTTO
PARTS**

STOCK CRANK HUB

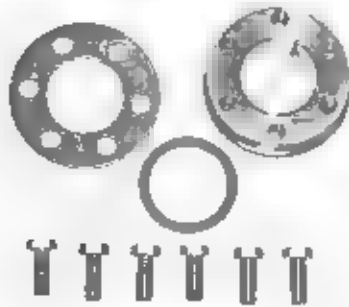
In an engine rebuild this part is often overlooked and can result in unexpected problems in an otherwise quality rebuild. Here are the things to inspect; Bolt to Tapped hole fit, with the threads clean and the bolt all but 3/8" engaged there should only be a just noticeable side movement. A stretched or elongated thread hole **will not** hold the flywheel tight. For more information on this see: P/N FR-230. On the contact face of the hub should there be any evidence of metal transfer, the flywheel has at sometime in the past worked loose and this condition is sure to exist. On the ground seal diameter the seal contact area must be free of any scratch or imperfection, wear should be less than .005". The cam drive gear is *very critical*, if this gear is worn it will quickly destroy a new aluminum cam gear. The contact area of the gear tooth should have a round contour, if you can see a flat spot as you turn it in a bright light it should be replaced.



Includes: Crank hub and Gasket.

Order #SH-129

SUPER BOLT, CRANK HUB



This is a new crankshaft hub that has been drilled and tapped for 3/8-24 bolts. This modification is a must for all Hi-performance use, even street type 140's and turbos.

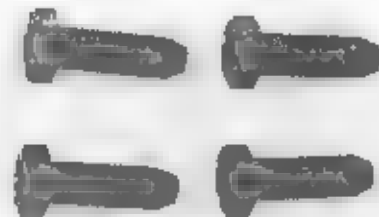
Kit Includes: Modified Hub, 6 Grade-8 Bolts & Special Washer Ring like P/N FR-230 to replace Stock Washer Ring

Order #CH 142

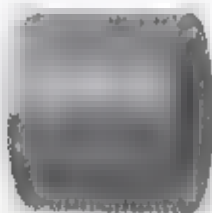
FLYWHEEL TO CRANK BOLTS

Don't take a chance on not replacing this expensive bolt set. Having already been torqued to 50-55 Ft. lbs., they are not a safe bet for reuse.

Order #FB-139



PILOT BUSHING



Here is another often overlooked item that requires engine removal for replacement.

Order #PB-182

**OTTO
PARTS**

ROD & MAIN BEARINGS Clevite 77

These Bearings have long been recognized by professionals and enthusiast alike to be the ultimate long life, high load bearing. When supplied with adequate lubrication they will provide maximum bearing service and durability under all conditions.

Rod Bearing set of 6

Available in: Std., .001, .010, .020, .030

Order #RB 134 For Std. and .001

Order #RB-134-OS For oversizes

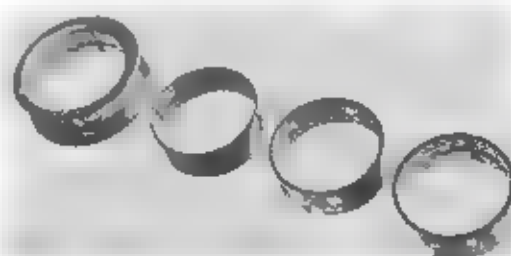
Main Bearing, one engine set

Available in: Std., .002, .010, .020, .030

Order #MB-135 For Std. and .002

Order #MB 135-OS For oversizes

Specify Size



CONNECTING ROD NUT & BOLT KIT



The con rod and bolts are fatigue prone and should be replaced with any rebuild. OTTO PARTS did a magna flux inspection of the old bolts from five engines, 40% of the bolts and 60% of the nuts showed signs of fatigue. In almost every case the bearing bore will be out of round. New bolts should be installed and the bearing rod end resized.

Set of 12 Bolts & Nuts

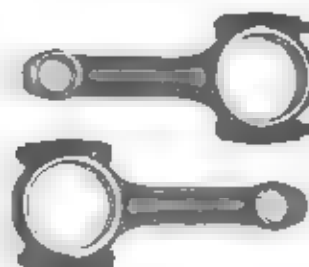
Set of 12 Nuts Only

Order #RB-138

Order #RN-138

CONNECTING RODS

These reconditioned rods should be top priority for a quality rebuild. None of the rods we have checked were round on the bearing bore. The rods are checked for, alignment & inspected for visual damage. We glass bead them, install new bolts & nuts then resize the bearing bore to G.M. specs. We will reject any rod sent for exchange that fails inspection & charge you the core amount of each rod that fails. What about balance? We keep the rods in sets as we receive them but G.M. did not control rod weight very close. The average spread for total weight is 10-12 grams; we have had sets over 20 grams spread. Many times the balance shop will not be able to balance them. OTTO PARTS has



developed special tools & techniques for this. If you want your rod properly balanced end for end, less than 2 grams total, order separate, see price list. If you are ordering pistons & would like to receive them properly installed on your rods, see price list.

Order #CR-214

**OTTO
PARTS**

STEEL THREAD INSERTS



The ideal fix for aluminum threads. The thin wall design makes them suitable in almost any close place. The unique feature of being expanded in the hole after installation insures the insert will stay in the hole.

The 1/4-20 inserts are perfect for repairing the threads where Corvair rocker covers and oil pans are attached. Order long inserts for valve cover and oil pan. Order short inserts for shroud holes.

The 3/8-16 inserts come in a longer length for the special application of case stud inserts. When ordering please specify "3/8-16 Longs" for the crankcase stud thread inserts. A short insert is 1 1/2 x diameter. A long is 2 x diameter.

Tools are required when installing the steel thread inserts. There will be a deposit to be refunded upon return of the tools and a small rental fee.

Order

#SI-113-A

1/4 20 long or short

#SI-113-B

5/16-18 short only

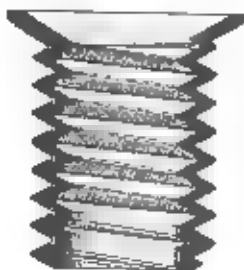
#SI-113-C

3/8-16 long or short

#SI-113-T

Installation Tools

SPARK PLUG THREAD INSERTS



Trade name Time-Serts because the inside thread is timed to the outside thread providing a uniform thin wall, steel insert. As shown in illustration spark plug heat range is not altered because

1. Thin wall design of insert.
2. Spark plug washer seals on recut aluminum sealing surface
3. Insert is expanded into the aluminum after installation to provide maximum heat conductivity through the insert.

You can install these inserts in a pair of Corvair heads in about one hour without the use of any power tools.

The use of these inserts eliminates the risk of stripping or cross threading soft aluminum threads. This unique insert obsoletes Heli Coil process and is much easier to install.

Kit includes.

Six steel inserts and use of installation tools.

Order

#TI-110

#TI-110-T

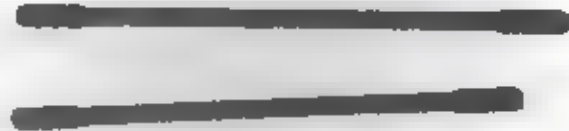
Installation Tools

Installation Tools are required to Install Inserts.

**OTTO
PARTS**

CRANKCASE STUDS

These studs are made from a high alloy material and heat treated to grade 8 spec's. The stock studs tend to be annealed by the heat from the exhaust tube on those studs that are close to the tube. The studs have a black oxide finish to retard rust. **OTTO PARTS** offers a special tap to size a good case thread before installation for a perfect fit. If you have pulled a stud out of the aluminum case or otherwise damaged the thread, we offer a special insert that will make a neat stronger than stock repair. (See P/N SI-113-C). There are two types of studs, one is sized for use in aluminum w/special tap the other is sized for use w/steel insert.



Specify upper or lower stud

For use in Aluminum
(upper or lower)

Order P/N CS-198-A

For use w/steel insert
(upper or lower)

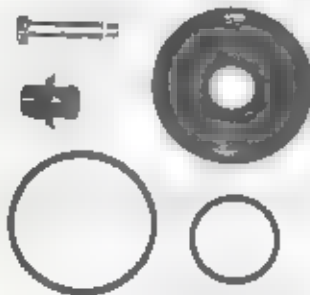
Order P/N CS-198-S

Tap for sizing

Aluminum Case Thread

Order P/N CS-198-T

SPIN ON FILTER ADAPTOR



The spin on oil filter adaptor allows you to use several different popular spin on type oil filters that can often be purchased for much less than the original filter. Works with or without right angle adaptor (only the bolt is different) your savings on filters will pay for this adaptor. The convenience of using a popular spin on type filter is invaluable.

To fit Stock Housing

Order P/N FA-200-S

To fit Right Angle Adaptor

Order P/N FA-200-R

OIL PRESSURE ADAPTABOLT

Replaces the stock oil filter bolt to allow you to move the oil pressure switch out where there is room to add the large electric oil pressure sending unit, a hobbs pressure switch or ??? Having moved the original pressure switch you can install an oil temperature sender in that location to monitor the actual temp of the oil being pumped to the engine. With the sender in the oil pan, readings can be low and the sending unit is subject to road damage.

For use w/Filter Kit
For use w/Stock Filter

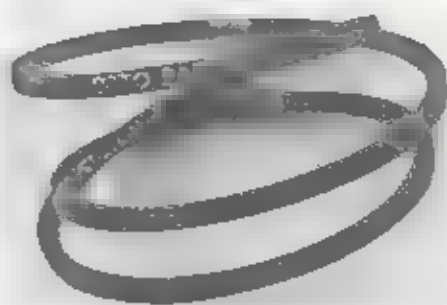
Order P/N PA-201-A
Order P/N PA-201-B



SUPER FAN BELTS

Since GM discontinued the original Corvair fan belt the belts available to fit your Corvair have been unreliable. **OTTO PARTS** has addressed the problem directly by having made a special belt for the Corvair application. The result is a belt that is even more reliable than the original GM belt. We have given these belts to our most demanding users and even road racers for field testing.

The result in every case was praise and great reviews. If what you want in your fan pulleys is a tough reliable belt made to get the job done day after hard driving day; then you can join the growing list of satisfied Super Belt users and forget your fan belt problems of the past, by ordering now.



Order
 #SB 560 for use with stock pulley
 #SB-580 — for use with OTTO Parts
 Incremental Fan Pulley

STOCK IDLER PULLEY (Rebuilt)



Rebuilt engine still noisy? Strange sounds from engine? Check your Idler Pulley. This seldom checked or renewed part is the source of many mysterious noises in the Corvair Engine.

This Idler Pulley and bracket assembly features a black painted pulley and black anodized bracket. The casting flash is removed from the periphery of the bracket for appearance. These attractive plated parts are reassembled to close tolerances, with a new, heavy duty double roller bearing for maximum durability.

Order #IP-109

ALUMINUM CRANKSHAFT PULLEY

This lightweight polished pulley is ideal for those who want to reduce weight or dress up their engine. The precision marked degree ring is installed by you. It eliminates the need for a special degree wheel when checking cam timing and provides accurate reference for checking distributor advance curve and total advance when tuning your engine.

Order #AP-070

Pulley & Degree Ring



**OTTO
PARTS**

FAN PULLEY, INCREMENTAL RATIO WITH SUPERBELT

The **OTTO PARTS** incremental ratio Pulley provides four fan speed ratios; 1.20-1, 1.25-1, 1.32-1, 1.40-1. By using the ratio best suited to your climate or application you will benefit from both greater net horsepower and increased fuel economy. This is due to the reduced horsepower requirements of the cooling fan, which also reduces fan belt stress for a longer lasting belt. See power requirements below.

It is important to note here that reducing the fan speed does not always reduce the cooling effect of the fan. When the fan speed ratio was selected by GM there were some compromises to be made. A fan speed ratio that will deliver enough air to cool the engine at normal driving speed with a minimum horsepower requirement from the engine will not deliver enough cooling air at idling speed. A fan speed ratio that would cool your engine at idle would turn the fan too fast to pump efficiently at highway speed. It appears that the choice was made to favor the idling speed with pumping efficiency just starting to fall off at about 3,000 engine RPM. With the ratio set at 1.4, testing indicates engine cooling is as good as the stock ratio in normal driving and maybe better at highway speeds. The 1.32 ratio works great at highway speeds and is adequate in city driving for all except 100° plus weather. For cold climates the lower ratios are helpful in getting adequate engine temperature.

Those of you who are road racing will find that you run cooler with about the same required horsepower using the 1.25 or 1.20 ratios and a full size fan, as opposed to the stock pulley with a cut down fan.

Ratios are selected by removing four mounting bolts, rotating the top half of the pulley to the desired ratio location, as indicated on the pulley and replacing the four bolts.

Includes: Fan Pulley, shakeproof mounting bolts, spacers to maintain belt alignment, SB-580 Super Belt, and Instructions.

This pulley is supplied with a tried and proven **OTTO PARTS** Super Belt. It is good to have a spare belt which you can order with your pulley at one half the two belt price.

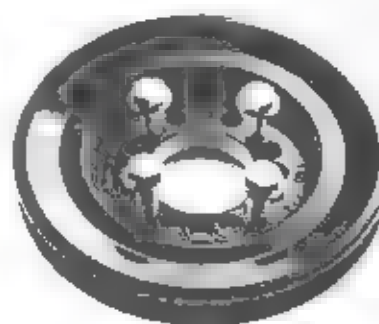
Order

#FP 148

'60-'64 w 1 3/16" Fan Bearing

#FP-149

'65-'69 w 1 1/2" Fan Bearing



RPM	HORSEPOWER REQUIRED				
	STOCK PULLEY	OTTO PARTS INCREMENTAL PULLEY			
	1.58-1	1.40-1	1.32-1	1.25-1	1.20-1
2,000	1.0	0.9	0.8	0.6	0.5
3,000	3.5	2.6	2.5	2.0	1.9
4,000	8.0	7.0	5.2	4.0	3.7
5,000	15.6	10.6	8.3	8.0	7.5
6,000	27.0	18.5	16.5	13.4	11.8

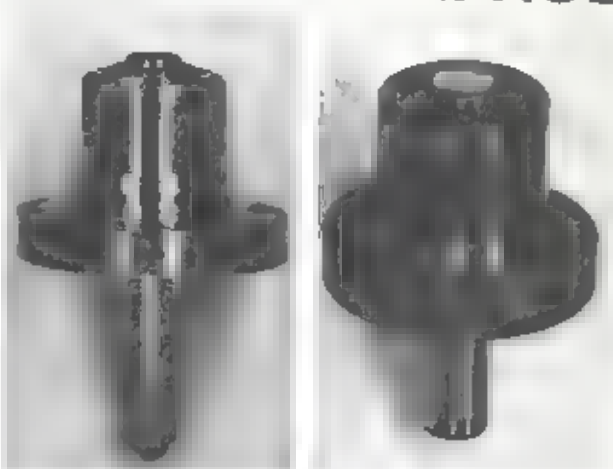
**OTTO
PARTS**

BLOWER FAN BEARING ALUMINUM HUB

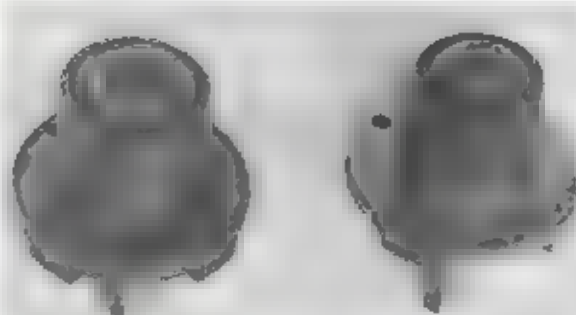
The advantage to the aluminum hub is less rotating weight which means less horsepower to accelerate the fan and less load on the belt. A high quality bearing is installed in this fully machined anodized hub. Available in the following colors: Gray (looks most like stock), Gold, Red, Blue. Please give a second choice of color as we may be periodically out of your first choice.

For '60-'64
For '65-'69

Order #AH-212-E
Order #AH-212-L



BLOWER FAN BEARING



Here is a part that is often overlooked at time of rebuild. This part is easily replaced while the engine is apart and requires a good deal of labor to replace after the engine is running.

The bearing on an old engine has probably gone over 50,000 miles and is not likely to go that many more. When this bearing starts to drag it can run several good fan belts before it is discovered as the culprit involved. We feel it is good judgement to replace this part with any rebuild.

Order #FB-146-E for '60 thru '64
Order #FB-146-L for '65 thru '69

BLOWER FAN BEARING INSTALLED

OTTO PARTS will install your fan bearing properly & precisely to G.M. specs. This is done on an exchange/deposit basis and price includes cleaning your housing. Order Bearing Hub separate.

For '60-'64
For '65-'69

Order #BH-213-E
Order #BH-213-L



**OTTO
PARTS**

Carb Base Insulators

These insulators isolate your carb's from high head temperatures and prevents carb fuel perculating. A cooler inlet charge will give a smoother running engine in all but the coldest climates. OTTO PARTS recommends you use a carb base gasket (BG-110) on top and on bottom of each insulator.

Order #CI-130



CARB BASE GASKETS



This is a precision high pressure gasket. OTTO PARTS cuts these from a quality non hardening high compliance material

To insure against vacuum leaks the base gasket should be replaced each time the carbs are removed. If you are using insulator blocks a gasket should be used on each side of the plastic insulator.

Most carb rebuild kits supply a very hard base gasket that does not have the required low speed cut outs. These should be replaced with this gasket. We recommend the set of 16 so you will have a spare set on hand the next time you remove your carbs

Order #BG-110

BASE GASKETS AND INSULATORS

This is a set of four insulators and eight gaskets. The amount needed for a "140". Sold at less than bought separate prices

Order #GI-130



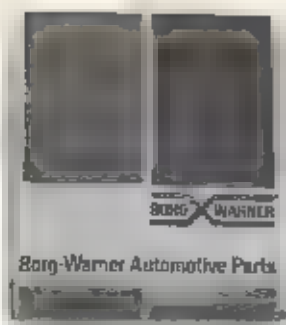
FLANGE CARB NUTS



If you have ever noticed the metal deformation around the carb mounting holes caused by the original nuts, then you are well aware of the need for a flange nut in this application. These nuts are zinc plated and make a nice finishing touch

Order #CN-137

CARB REBUILD KIT



This is a quality rebuild kit. We have had good luck with them. You might want to substitute the base gaskets for our P/N BG-110. Don't forget a good rebuild should also get new main jets, our P/N CJ-145.

Each kit does one carb. Fits all "H" and "HV" carbs

Order #CR-173

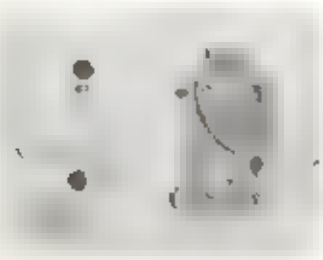
CARB MAIN JETS

Precision main jets are a must whether you are tuning for performance or economy. While the main jet is often assumed to be acceptable if it looks OK, this is a common pitfall in carb tuning and rebuilding. Both erosion and corrosion can affect the fuel flow thru the main jet by two or more sizes. You may also be surprised by the improvement in your 140 when you throw out those .049 secondary jets and install a set of .052/ .053 jets.

Available in .050 thru .056
Order #CJ-145-(50 thru 56)



Fuel Pressure Regulators



One of the most important factors in obtaining better gas mileage is accurate fuel level control.

With a stock fuel pump the fuel pressure to the carbs varies with engine RPM and so does the fuel level. For this reason almost without exception the addition of a fuel pressure regulator will result in a noticeable improvement in gas mileage.

This dual outlet regulator lends itself to the Corvair installation. Preset at 4 lbs., it is adjustable on the car.

Fuel Pressure Regulator

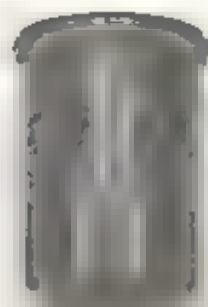
Order #PR-103

OIL FILTERS

Original type oil filters are not difficult to get at OTTO PARTS. We stock the quality Fram filter. Why not order a years supply now? Shipping costs are less expensive than the gas you will burn driving around trying to find one when you want to change your oil.

See Price List for quantity discount.

Order #OF-140



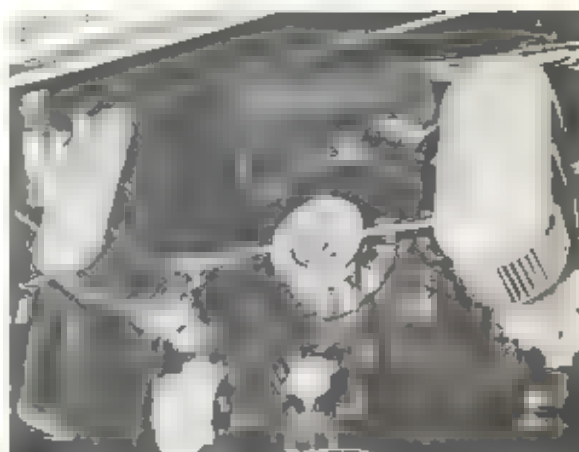
**OTTO
PARTS**

AIR FILTERS (For 140 or 4x1)

You can improve both performance and appearance of your engine with these air filters. You should never need to buy another filter element. These dual element filters are washable and should only require service every 30,000-50,000 miles depending on conditions. The free breathing design enhances performance, a must for off road; a money saving improvement for street use. You will be glad you switched. Requires the removal of two bosses on carb air horn so connector tube can fit over and seal tight.

For 140's Order #AF-171-B

For OTTO 4x1 Kit Order #AF-171-A



4x1 CARB KITS (converts 2x1 Engines)

This kit will convert your 2x1 engine to a 4x1 much like a 140 engine. The progressive linkage is very positive and well constructed to stay adjusted. Linkage ratio is designed to gradually open the secondary carbs after 25% throttle opening on the primary carbs. Testing indicates this to be the ideal ratio for best throttle response and driveability. The horsepower increase on a stock engine is 40% and even more if a good low speed cam with slightly increased lift is used, such as the OTTO PARTS OT 10 cam.

The adaptor casting also rotates the carb 90° which eliminates carb flooding and starving in hard cornering.

Those of you who have automatics will really be impressed with the sharp improvement in response from stop lights.

When the torque curve of an engine with this conversion is compared to a stock 140, it offers a higher torque curve than a 140 hp engine at engine speeds up to 3,000 to 3,500 RPM, which is obviously the most used RPM range in street-type use. In respect to gas mileage, when driven with a light foot or in the same manner as your stock engine it will give comparable mileage.

The carbs you will need with this kit is two more like the ones that came on your engine. Year is not important but they should be a like pair and must not be 140 secondary types.

Should you want to use carb base insulators, which we do recommend, order 4 insulators and 4 additional base gaskets.

Kit includes: All linkage pieces, 4x1 Adaptor Casting, fuel block, fuel hose, hose clamps, hose fittings, carb base gaskets, carb studs, and flanged carb mounting nuts.

Order #KK-172 A



140 CARB LINKAGE & ROTATORS

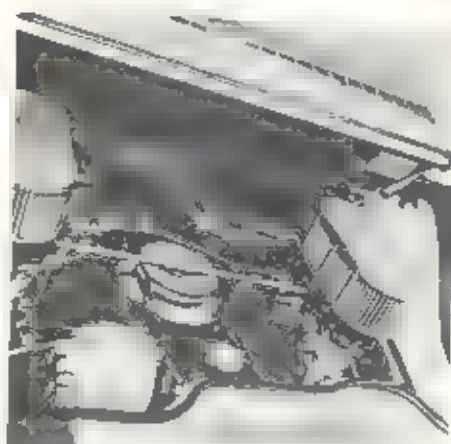
For those of you who have wished for an improved Linkage Kit that would stay synchronized and improve the low and mid throttle response, this Carb Kit is for you.

The rotators turn the carbs 90° which eliminates carb flooding and starving in hard cornering.

The progressive Linkage is very positive and well constructed to stay adjusted. Linkage ratio is designed to gradually open the secondary carbs after 25% throttle opening on the primary carbs. Testing indicates this to be the ideal ratio for best throttle response and driveability.

All highway driving is within the limits of primary carbs, with the linkage opening the secondaries at a rate that improves the air flow balance to all cylinders. This improves low and mid throttle response. These features are also helpful on automatics.

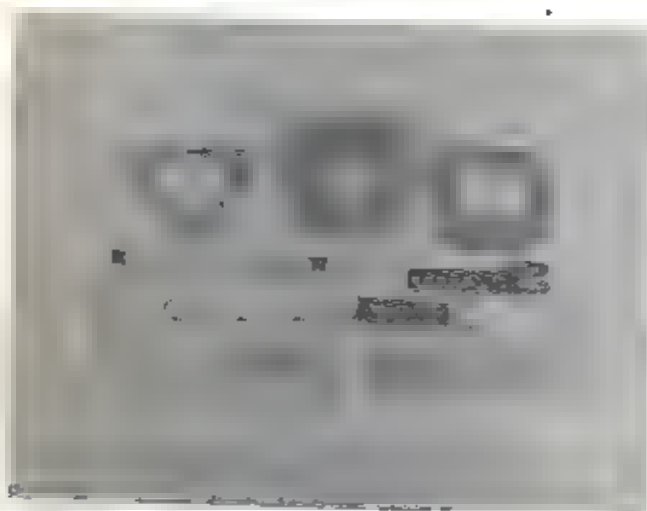
This kit requires the use of 4 primary type carbs so you will need to get replacements for the 2 original secondaries on your 140.



Should you want to use carb base insulators which we recommend, order 4 insulators and 4 additional gaskets. Should you want new flanged carb nuts, order P/N CN-137. Kit includes 4 carb rotators, all linkage pieces, fuel block, fuel hose, hose clamps, hose fittings, carb base gaskets, carb studs.

Order #KK 172-B

S U CARBURETOR ADAPTER FOR CORVAIR TURBOS



This kit lets you replace the stock Carter YH carb with the more desirable S U carb. The S U is a variable venturi demand sensitive carburetor which is ideally suited for turbo-charged applications. Cures starving in hard cornering and significantly improves mid and top end power. Some increase in boost pressure can be expected.

NOTE: We recommend a 1 1/4" or 2" S U (or the Japanese equivalent) carb which can be found at your local foreign auto wrecker. Includes adapter, hardware, gaskets, linkage and needle jet.

Order #SK 045

Shipping Wt. 3 lbs.

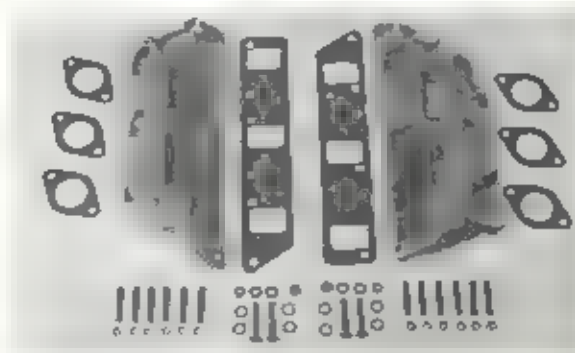
Adapter kit

**OTTO
PARTS**

CORVAIR TO IDA-3 WEBER MANIFOLD

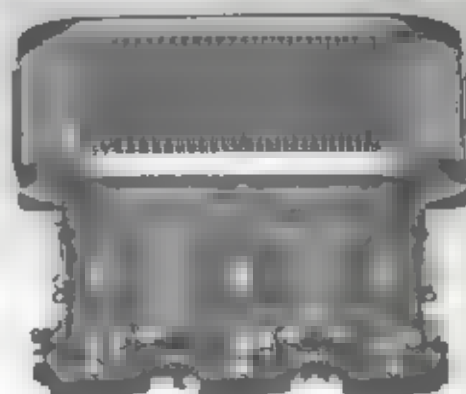
These quality cast aluminum manifolds are easily adapted to your corvaire 140 H P heads. A vertical milling machine is required to do the machine work on your heads. Otto Parts allow 5 hours to do the machine work & 3 hours for port matching and any welding that may be required on some heads. The kit is as shown with manifolds, gaskets, mounting bolts & carb studs with nuts. Complete machining instructions are included.

Order P/N WF-195



WEBER CARBS IDA-3 40mm x 30mm Venturi

Why put IDA 3 Weber Carbs on a street 'vaire? Most people agree they are great for performance at 20-30% horse power increase with no other changes. Here is what is not widely known about this setup for the street. The power at 2,300-2,500 RPM with this setup it is more of a proportional increase from 1,000 RPM up. Much better driveability. Fuel efficient, 20% improvement over stock carbs that are working well, not withstanding that most stock carbs around today are worn out. The customers we have talked with over the years who were using the IDA 3 carbs on the street were getting 28-32 MPG highway driving. I know some of you are saying I get almost that good with my stock carbs and I don't doubt that you are. The people we are referring to were not economy oriented but street fliers who got good mileage. If you are getting 28-30 MPG with stock carbs you would probably have no trouble getting 33-35 from the Weber setup. Don't forget that what you burn does not go into oil dilution to help wear out your engine. Detonation (pinging) while this is not a cure-all in this area the highly emulsified precision metered mixture which is evenly distributed to each cylinder is much less prone to detonate than what you have now. This also results in a cooler running engine.



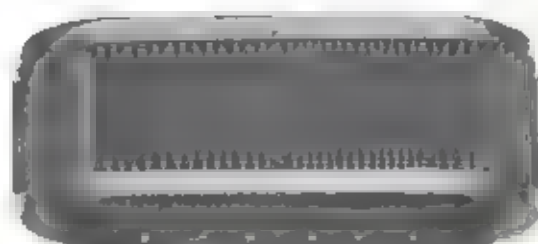
Now do a little math to prove that your fuel savings will be \$120-150 per 10,000 miles driven & then decide if you want to step up to the class of Weber carburation.

Order P/N WC-192

WEBER AIR FILTERS

Gold anodized aluminum frames & washable cloth type elements provide free flow filtering on or off road. You should never need to replace the elements in these filters, just wash and reoil the cloth.

Order P/N WF-193



**OTTO
PARTS**

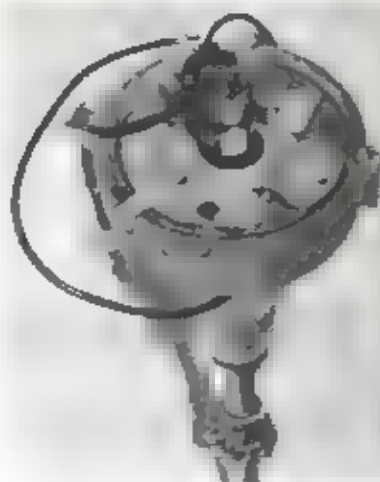
**This Space is Reserved for
New Products Now in Development**

PRECISION DISTRIBUTORS

Your engine's performance depends directly on the distributor, yet the distributor is one of the seldom checked, often taken-for-granted components in the engine compartment. Many well rebuilt engines never achieve their full potential because they are returned to service with the old worn out distributor.

Even with a brand new stock distributor performance potential is lost because the stock advance curve is far from optimum for today's fuels. These distributors will improve the engine's responsiveness and compatibility to current fuel available.

Our precision distributor is a modified, rebuilt stock distributor that has dual bushings to stabilize the shaft, improve point function, and lengthen distributor life. The points, cam, advance weights and springs are replaced. We modify the mechanical advance to supply the proper timing for compatibility with today's fuels at all RPM. This eliminates the need for vacuum advance.



Please send a core that you would want your distributor built from. Before sending us your distributor remove the following: cap, rotor, points, and vacuum advance pot.

Order #PD-166

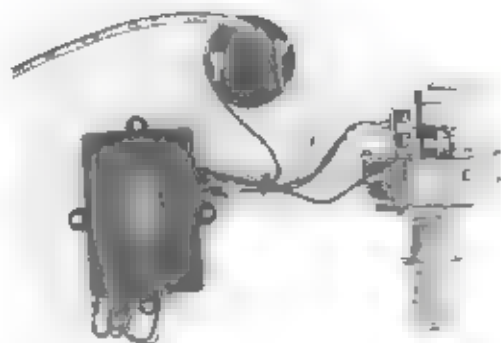
Order #PD-166-T for Turbo's

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New Products Now in Development**

ALLISON XR700 ELECTRONIC IGNITION

OTTO PARTS offers this breakerless Ignition system simply because we feel it is the best. With a lifetime warranty this unit has to be reliable. The advantages are: Quick starts hot or cold, smoother idle, eliminates missing caused by improper spark, precision timing 1/10 of one degree, and tune-up requirements are reduced to changing plugs maybe one fourth as often as with a stock ignition. Not only do you save money and time, but your engine runs like you just did a tune-up, all the time.

The installation of this system does not prevent the use of the vacuum advance. In case of emergency it can be quickly switched back to stock.

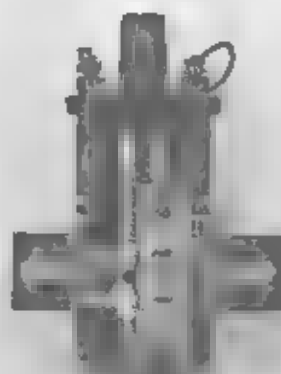


This easy to install reliable system is truly a wise investment.

Order #EI-167

See Price List for \$\$\$ Saving Offer!

PERMA-SPARK COIL



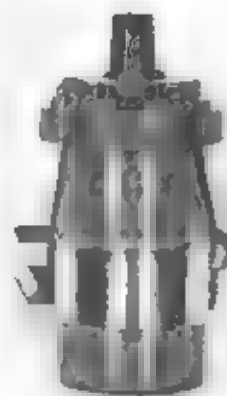
Made by Allison Ignition this street coil provides a spark twice as hot as a stock coil. The energy output is balanced voltage versus current, so that the actual energy is doubled. Works great with stock ignition and is ideally matched to the Allison Electronic Ignition.

Order #HC-165

RACING COIL

Allison Ignition quality delivers 60 kV spark with high current discharge. Used with the XR-700 Ignition you have magneto fire power with solid state accuracy and reliability. For performance use only. Not for street use.

Order #RC 165



OTTO PARTS can supply any Allison Ignition product for any make car at like prices.

**OTTO
PARTS**

SILICONE PLUG WIRES

With original type shroud boots for a positive seal to the top shroud, this hi-energy ignition wire is manufactured by Allison Ignition with a new concept in this type of wire. The jacket is made from 100% virgin silicone. The conductive multi fiber core is "resistance tuned" to deliver maximum energy to the plugs. It is unsurpassed in suppression of radio noise.

Best of all it will probably be the last set of plug wires you will ever need to buy for that same engine, as it will deliver "like new" performance after 100,000 miles.

Order #PW 164



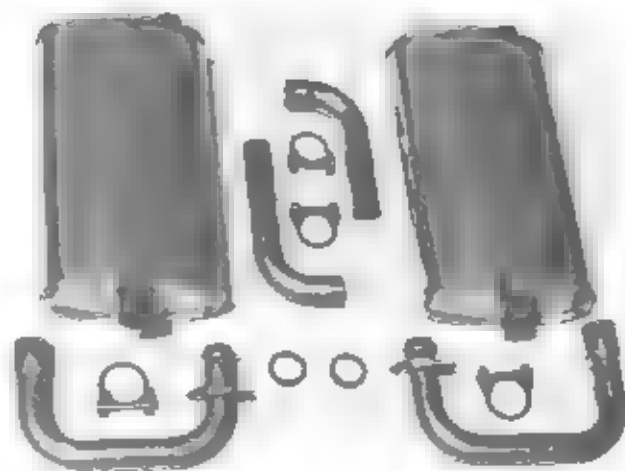
**This Space is Reserved for
New Products Now in Development**

DUAL MUFFLER KITS

140, 110, 95

These muffler kits are a direct replacement for the original 140 H.P. exhaust system. The head pipes are mandrel bent to provide better flow. The mufflers are a quality replacement muffler for the 140 (use stock muffler straps). We also provide this same kit for all small valve cars by providing a head pipe and flange to fit the smaller exhaust manifold. When this system replaces the stock cross over pipe a reduction in head temp can be expected. Kit includes: (2) Head pipes with flange, (2) mufflers, (2) tailpipes, (2) exhaust manifold packing, (4) tube clamps. If you need muffler bands see P/N MS-185

Order P N DM-184



MUFFLER BANDS



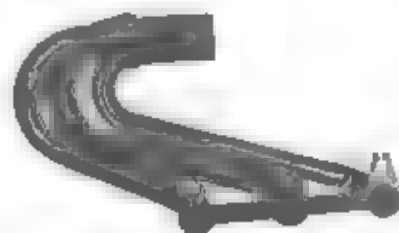
These are direct replacements for the G.M. bands. They have a cad. plate finish to prevent rust.

Order P/N MS-185

CAR HEADERS

If you have always wanted a tuned header designed to couple up to a turbo muffler that had a rigid flange with proper counter bores for the exhaust packing, this is it.

Order #CH-215



TURBO MUFFLERS

These are high quality mufflers and exact replacement for the stock '62-'64 turbo muffler.

Order #TM-216

CHROME TURBO OUTLET

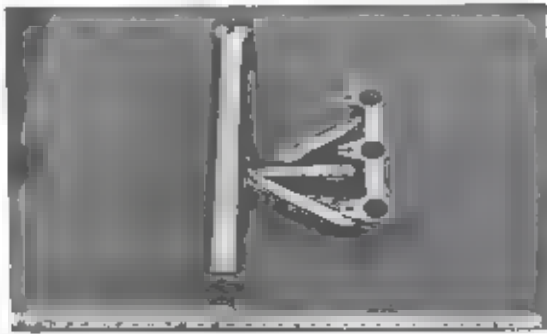
You can use these on either the stock turbo or turbo mufflers on our headers.

Order #CO-217



**OTTO
PARTS**

BUGGIE HEADERS, REAR ENGINE



This is our most popular header. Will fit almost any commercially built rear engine buggie. Tuned equal length for big broad mid range powerband. Super rigid flange is chamfered for positive seal.

Includes: Exhaust Packing, specify type of heads.

Chrome Rear Engine
Buggie Headers
Bare Tube Rear Engine
Buggie Headers
Muffler Inserts

Order # BH-197-C

Order #BH-197-P
Order #MI-197

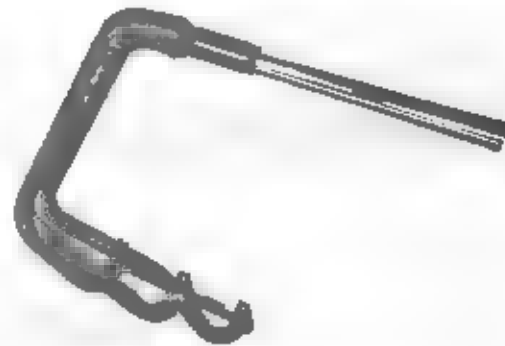


HIGH BUGGIE HEADERS, REAR ENGINE

For that bold look. These high up sweep headers feature chrome megaphone with black tubes. Tuned equal length for good low end and mid power. Very strong below 5K R.P.M. Fits almost any rear engine buggie. Super rigid flange is chamfered for positive seal.

Includes: Exhaust Packing, specify type of heads

High Buggie Headers Order #HH-231
Megaphone Muffler Inserts Order #MM-231



MUFFLED BUGGIE HEADERS

These are popular with Trick's and street buggies. The tube design is the same as our standard buggie headers (P/N BH-197) only they have a glass pack muffler in place of the collector. Has rigid exhaust flange.

Includes: Exhaust Packing, specify type of heads

Chrome Muffled Headers Order #MH-232

SINGLE STINGER REAR ENGINE BUGGIE HEADERS

This six into one design with chrome megaphone gives excellent performance and a unique sound. Fit is more complex than other headers. You can try them for fit and return unused header. There will be a 15% restocking charge.

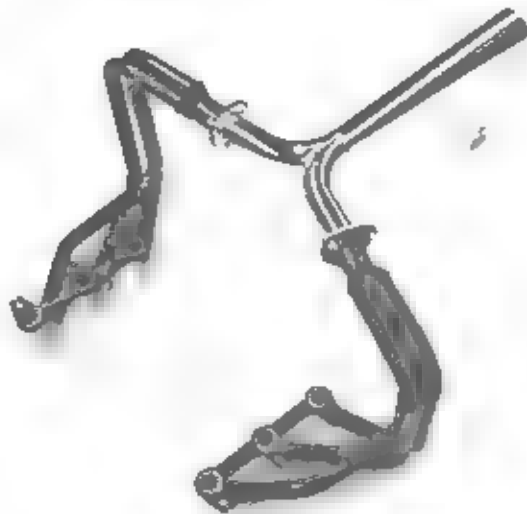
Includes: Exhaust Packing, specify type of heads

Single Stinger Headers
Megaphone Muffler

Order #SH-233
Order #SM-233



MID ENGINE BUGGIE HEADERS



The six into one design is much like the rear engine headers. Fit on a mid engine header requires that the header be installed before other items are mounted. We can't say they will fit your buggy, but you can try them for fit and pay a 15% restocking charge if you return them unused.

Mid Buggy Headers
Megaphone Muffler

Order #MH-234
Order #SM-233

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New Products Now in Development**

**OTTO
PARTS**

LOWER CONTROL ARM BRACKET



Relocates the pivot point of the lower control arm to be parallel under all conditions. The addition of this part alone will reduce oversteer and improve tire life. With the addition of the bracket and our stiffer molded urethane control rods P/N CA-136 you will find that not only does the car corner better but tracks straighter on the open highway. There is no change in ride feel. I cannot think of any other modification that makes this much difference for this little money.

Order #4022 12

Lower Control Arms

This is a remanufactured part. The ends are remolded with a synthetic compound that is much more dense than the GM rubber, yet is adequate to absorb road and wheel vibrations. The stiffer less yielding material makes a dramatic improvement in the straight tracking of your Corvair. It also significantly reduces the camber change in cornering which not only improves handling but reduces tire wear.

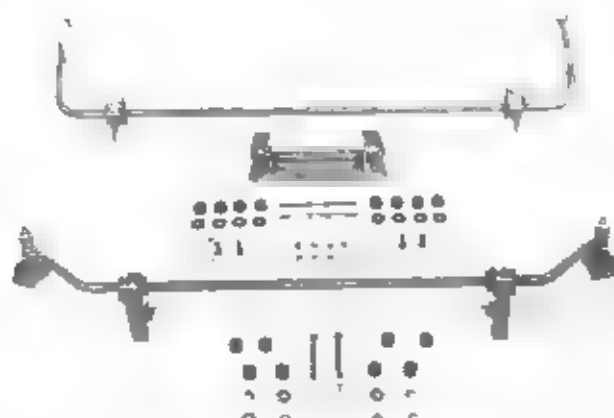


The material used is unaffected by differential oil or ATF which is one of the leading causes of failure in the stock bushing.

Sold on an exchange basis or with a 30 day core deposit.

Order #CA-136

HIGH PERFORMANCE HANDLING KIT



If you have a '65 or later Corvair, and want it to handle like a high bred formula car, install this complete kit front and rear. The anti-sway bars limit chassis roll in hard cornering and the lower control arm bracket corrects the geometry of the lower control arm to remain parallel regardless of chassis loading. This keeps the tires planted squarely on the pavement for best traction. The rubber bushings in the stock control arms deflects under hard cornering and should be replaced with our firmer molded urethane ones P/N CA 136. The fine tuning of this kit will depend on tire selection and tire pressure, along with choice of shocks. Any car that handles this well is an exciting adventure to drive.

Complete Kit as shown
Front Bar & Hardware
Rear Bar & Hardware

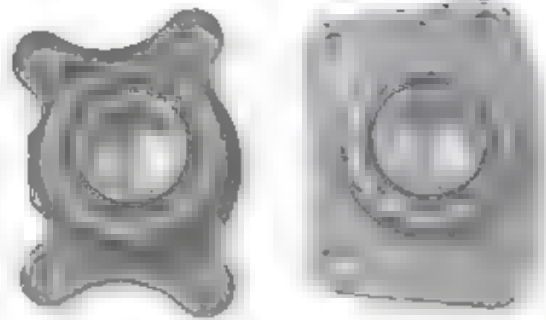
Order #4029
Order #4021
Order #4022

AXLE BEARINGS '60-'64

These are the original self aligning type as made by Hyatt. Limited supply of N O S bearings. The '60-'62 is bearing P/N AD-11034Z-18, '62-'64 is bearing P/N AD-11034Z-20. See Price List for axle w/new bearing exchange.

'60-'62 Axle Bearings
'63-'64 Axle Bearings

Order P/N AB-199-E
Order P/N AB-199-L



AXLE BEARINGS, FWD. CONTROL

We do not have any new ones, but we often have used ones that have been inspected and regreased. We make no claims for service life on these. The rivets are replaced with bolts and you are invited to make your own inspection.

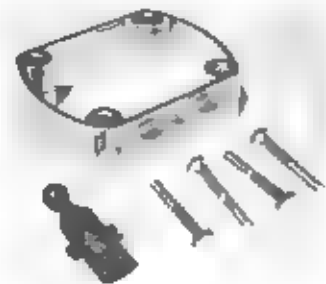
Call for price and availability.

QUICK SHIFT KIT

Reduces shift lever travel on all 3 & 4 speed Corvairs. Provides that quick, positive action that makes shifting a pleasure. The polished aluminum spacer is a rugged die cast part. The shift extender & bolts are heat treated for strength. Instructions included.

Order #QS 141

Specify year model



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New Products Now in Development**

**OTTO
PARTS**

4 SPIDER DIFFERENTIAL

The spider gears are the weak link in the differential with a stock 2 spider carrier. With the **OTTO PARTS** 4 spider carrier the strength is doubled and the wear factor is reduced 50%. The carrier casting is stronger than stock with solid metal around the cross shaft holes. To eliminate distortion under load. The center block is made of high alloy steel & heat treated. For the late style kits the center block is machined for minimum end play on the stub shafts. Designed not to use washers behind the spider gears.

Considering that on today's high mileage diff's the side gear and stub shaft bearing bores are worn out. (Just check the side play on the old one.) This part would be a wise choice for a differential rebuild.



If your objective is high performance or heavy duty use this part is a must.

Kit Includes: (1) Differential Carrier (2) Center Block, (3) 2 Short Spider Shafts.

Order #4023-E '61-'64 Diff's

Order #4023-L '65-'69 Diff's

CENTER BLOCK & SHAFTS



The new redesigned **OTTO PARTS** center block and interlocking cross shafts are a must if you are planning to rebuild an old crown 4 spider kit. The **OTTO PARTS** center block is made from high alloy steel and heat treated to be super strong and wear resistant. The width has been changed for minimum stub shaft end play. The cross shafts interlock with the long shaft for a solid assembly that prevents the shafts from rotating and wearing the housing.

Kit Includes: Center Block & 2 Short Cross Shafts

Order #4023-1

4 SPIDER GEARS & PARTS

The proper way to assemble a 4 spider kit is with all new parts. This kit is all the internal parts needed to assemble a 4 spider kit. At less than bought separate prices.

Kit Includes:

4 Spider Gears

2 Thrust Washers

2 Side Gears

1 Cross Shaft

Order #4023-2

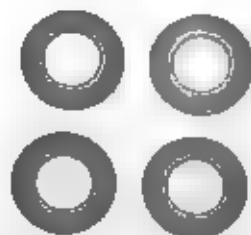
SPIDER GEARS

Two are required for a stock differential or to complete the set in a 4 spider kit

Order #PG024



CUP WASHERS



Two are required behind the spider gears in a stock differential. They should be replaced with any rebuild. They are not used in an OTTO PARTS Four Spider Carrier

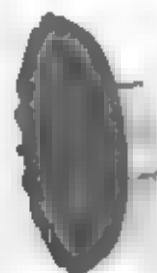
Order #CW 029

SIDE GEARS

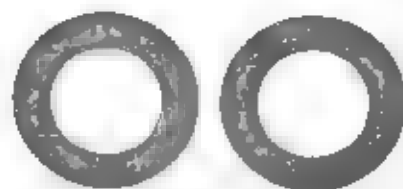
Two are required for both stock and 4 spider differentials. However, if you have a posi you should use one stock and one posi spider carrier. Both parts fit all years

Order #SG-025
Order #PG-026

Std. side gear
Posi Side gear



THRUST WASHERS



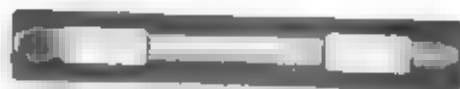
One is required behind each side gear (2) in a standard differential. (One req'd posi) They should be replaced with any rebuild

Order #TW-028

SPIDER GEAR CROSS SHAFT

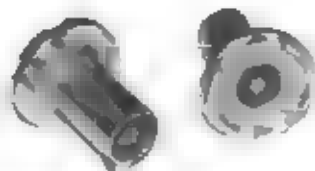
If you are rebuilding your differential don't overlook this inexpensive but important part. It doesn't make good sense to mount a new gear to a worn shaft. One only required. Fits all years.

Order #CS-027



**OTTO
PARTS**

THROW OUT BEARING COLLAR



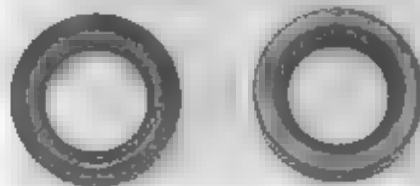
Machined from solid steel bar stock for a stronger more reliable part. Will not fracture like the stock cast iron part. The bore length for the input shaft seal has been changed to accept two seals. Located to place the seal contact of both seals on a new wear area of the input shaft. They have a cad iridite finish to prevent rust. For input shaft seals order P/N IS-157.

Order #TC-190

INPUT SHAFT SEAL

This seal should be replaced any time you do service that allows access to the seal. A faulty seal here can result in an oily clutch or even worse a dry transaxle.

Order #IS-157



INPUT SHAFTS



Available to fit all year 4 speeds. They are made from a stronger high alloy material for greater strength and longer life. Both splines are precision machined. The seal and bearing diameters are ground to a very fine finish.

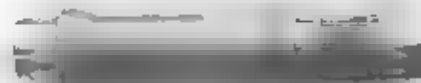
Order #IS-175

Specify year

Pinion Shafts

Our Pinion Shafts are made from a stronger more wear resistant material. The spline lengths have been increased to provide maximum engagement and longer life of all related parts. These are for use in '65 thru '69 manual Corvairs, but they can also be used in early models without a speedometer.

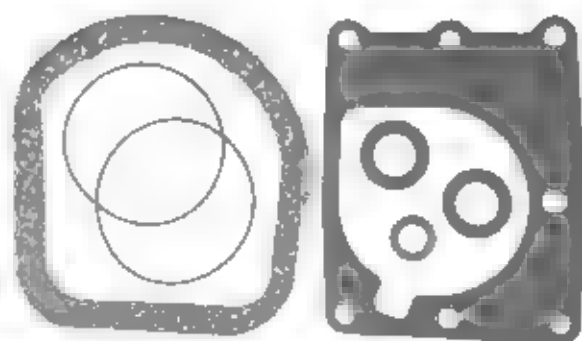
Order #PS-169



DIFFERENTIAL GASKET SET

This is a quality OTTO PARTS custom gasket set. The "O" Rings for the side adjusting sleeve are high temp viton. The top cover gasket is thicker than stock and made from rubberized cork for a positive seal. The trans/diff gasket is a special high pressure gasket material. For pre '66 if you do not know exact year give diameter of input shaft sealing surface. We can also supply the seals & gaskets separate.

Order #DG-183



DIFF. GASKETS & SEALS SEPARATE

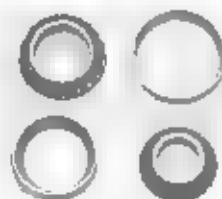
DG-183-1 Top Cover Gskt
 DG-183-2 Trans/Diff
 DG-183-3 Axle Yoke Seals
 DG-183-4 Viton "O"-Rings Adj. Sleeve
 IS-157-E/L Input Shaft Seal

DIFFERENTIAL BEARINGS

The large one is for the carrier side bearings. The smaller one fits both ends of the pinion shaft. Each part # is for the bearing and the race. Fits '61-'69 all.

Pinion Bearing Order #PB-186

Side Bearing Order #SB-187



PINION BEARING SHIMS



You will need a selection of shims to properly adjust gear contact pattern in your differential.

Set Includes: .006, .009, .012, .015 & .018

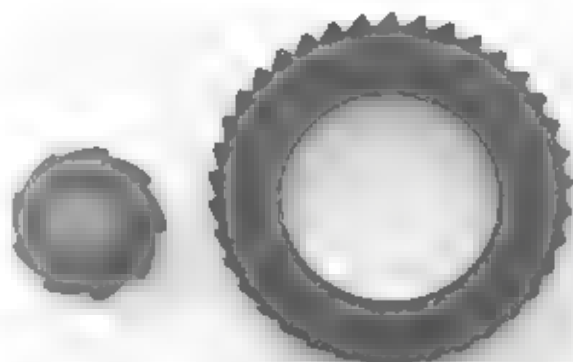
Order #PS-189

4:11-1 RING & PINION GEARS

This is a great ratio for many special applications. It is the ideal ratio for ultra vans. With this gear heavy vehicles run cooler and pull long grades with ease. For buggies, autocross and drag race we offer this gear with a special heat treat for high shock loads. While this slightly reduces the wear resistance it greatly improves its ability to withstand high shock loads. All done buggies w/paddle tires and drag cars should get the special heat treat.

High Wear, Street Use
 High Shock Load, Off-Road

Order #GS-168
 Order #GS-168-T



**OTTO
 PARTS**

**This Space is Reserved for
New Products Now in Development**

TRANSMISSION MAIN SHAFT

These are direct replacements for the stock mainshaft. Machined from high alloy steel, heat treated and ground to exacting tolerance. You should carefully inspect the needle bearing journals for the final drive. If they are pitted or scored in any degree the new needle roller bearings will fail prematurely.



For '66-'69 3 & 4 speed
For '62-'63 4 speed
For '64-'65 4 speed

Order #MS-218
Order #MS-219-E
Order #MS-219-L

NEEDLE BEARINGS, FINAL DRIVE

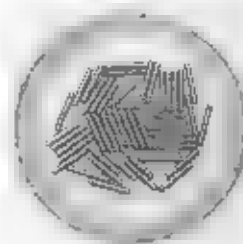
These are needed between the mainshaft and final drive gear should be replaced with any transmission rebuild.

For '60-'65 3 & 4 speed (48)
For '66-'69 3 & 4 speed (72)

Order #FB-222
Order #FB-223

NEEDLE BEARINGS, COUNTERSHAFT

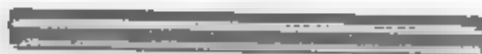
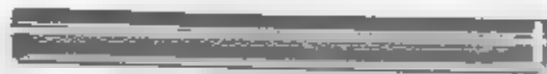
These are exact reproductions of the original countershaft needle bearings. The needle bearings and countershaft (see P/N CS-226) should be replaced with any transmission rebuild.



For '61-'65 4 speed, (92)
For '66-'69 3 & 4 speed (54)
For '60-'65 3 speed

Order #CB-220
Order #CB-221
Order #CB-221

TRANSMISSION COUNTER SHAFTS



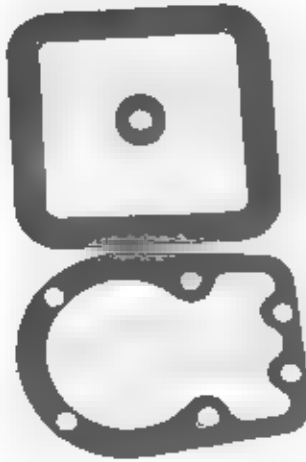
These are high alloy heat treated counter shafts ground to exacting tolerance and fine finish for long service life.

'61-'65 4 speed
'66-'69 3 & 4 speed

Order #CS-226-E
Order #CS-226-L

**OTTO
PARTS**

TRANSMISSION GASKET SETS



These gasket sets feature the same high quality gasket materials found in our engine gasket sets. We DO NOT include the trans to diff. gasket as it is also part of the diff. set. Specify if 3 speed.

'61-'65 Order #TG-188-E

'66-'69 Order #TG-188-L

**This Space is Reserved for
New Products Now in Development**

INTRODUCTION CORVAIR ENGINE TO VW TRANSAXLE ADAPTOR KITS

You can double both the horsepower and reliability with any VW type transaxle or 911/912 Porsche by adapting a 2.7 liter Corvair engine to it. In the VW Bug some modification is required to the deck lid in order to clear the alternator, etc. For most other applications this is not required. **OTTO PARTS** supplies all the special parts to mate the two together and the finished job looks as if they were made for each other.

One of the most frequently asked questions about this conversion is: Will the VW transaxle handle the Corvair torque? The VW transaxle has proven very reliable. There are two ways to achieve the conversion and the choices made here do have some effect on the life and durability of the transaxle. The Corvair engine rotates opposite that of the VW. The cheapest and probably the easiest way to deal with this is to reverse the ring gear in the differential. This method is satisfactory for a light service type application. However, it should be noted here that this results in applying the horsepower to the coast side of the ring gear, it is not as strong in this configuration.

The Best Solution: And the way it must be done for all I.R.S. type transaxles is to install a reverse rota-

tion cam kit in the Corvair engine. This gives you the same rotation as the VW engine. The power is now applied to the drive side of the ring gear. In this configuration the VW transaxle is very reliable and transfers power more efficiently. If you plan to build a high performance engine and run it hard there is a great selection of extra strong after market diff parts available. With any Corvair/VW application you should at least use the heavy duty aluminum side plates. For buggies and hard use a four spider diff carrier is a must. You can tune the trans ratios to your needs with the many gears available.

Mid Engine Misconception: Now there is a new twist to the confusion about proper engine rotation. Logic will conclude that, if you turn the transaxle around for mid engine and use a Corvair engine which rotates opposite the VW, the car will go forward with 4 speeds. While this is true the point that is often overlooked is that the drive power is applied to the coast side of the ring gear.

The Solution. If you use a swing axle type transaxle you must reverse the ring gear in the transaxle and use a reverse rotation cam in order to apply power to the drive side of the ring gear.

CORVAIR TO VW INSTALLATION MANUAL

This manual is included with all of the Adaptor Kits. Covers all aspects of the conversion and will explain most of the questions you might have while considering a Corvair/VW conversion. The price paid for the manual is refundable when you purchase the Kit and refer to invoice number for manual. You should own one before you order a kit.

Order #5103

**OTTO
PARTS**

REVERSE ENGINE KITS

This method is required for all I R S. type trans-axles and is the best choice for all transaxles. The reverse rotation cam and distributor reversing gears are ordered separate

Kit Includes

5001 Engine Adaptor & Hardware
5003 Corvair/VW Flywheel
5004 Pressure Plate
5005 Clutch Disc

You can substitute any of our special 200mm clutch disc's with your kit. Specify which P/N you want and add difference to kit price. You must specify Flywheel, Ring gear, Early or Late Pressure Plate.

5008 Throttle Linkage
5103 Corvair/VW Manual
5206 Reverse Belt Guide
Pressure Plate Bolts

Order #5152

REVERSE ROTATION CAMS

The reverse cams are available in all of the OTTO PARTS grinds, see page 6 for grind information. The OT 10 & OT 20 grinds are available in regrinds which requires a regrindable cam exchange. The hotter grinds are available in new proferal billets only. The prices given include the distributor reversing gear set. If you want cam only deduct amount shown for gear set P/N GS-196

Reverse Regrind

Order P/N RG-194

Reverse Billet

Order P/N RB-195

Distributor Reversing Gears Order P/N GS-196



REVERSE RING GEAR KITS

Basic Corvair/VW Kit

This kit is for those who have decided NOT TO reverse the engine and want only the minimum parts to bolt the Corvair engine to the VW trans-axle. You will supply your own pressure plate and clutch disc. You must specify light or heavy flywheel

Kit Includes:

5001 Engine Adaptor
& Hardware
5002 Starter Adaptor

5003 Corvair/VW
Flywheel
5103 Corvair/VW
Manual

Order #5101

Deluxe Corvair/VW Kit

This kit is for those who have decided NOT TO reverse the engine but want all of the parts needed to adapt the Corvair engine to the VW trans-axle.

Kit Includes:

5001 Engine Adaptor & Hardware
5002 Starter Adaptor & Bushing
5003 Corvair/VW Flywheel
5004 Pressure Plate, 200mm
5005 Clutch Disc
5008 Throttle Linkage
5103 Corvair/VW Manual
Pressure Plate Bolts

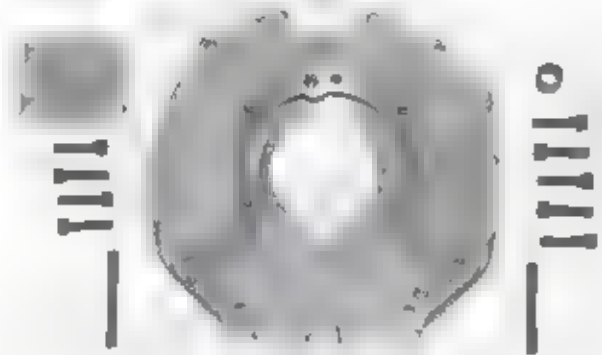
Order #5102

CORVAIR TO VW ADAPTOR

This precision cast aluminum adaptor is designed to mate a Corvair engine to a VW or Porsche transaxle. The two look as if they were made for each other when this adaptor is used.

Includes: Engine Adaptor, 9 Mounting Bolts, Two Studs, Pilot Bushing and Blockoff Plate.

Order #5001



CORVAIR TO VW FLYWHEEL, STEEL

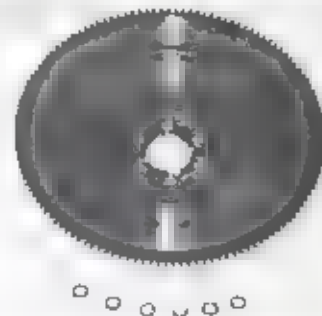
This is a one piece heavy duty steel flywheel. Weight is approximately 17 lbs. with ring gear and can be lightened to about 12 lbs. It is compatible with ceramic disc. Precision machined to accept all 200mm pressure plates. You must specify which ring gear is required. Contents are as shown.

17 Lb. Flywheel

12 Lb. Flywheel

Order #5003-S

Order #5003-S/L



**OTTO
PARTS**

CORVAIR STARTER ADAPTOR & BUSHING



Adapts the Corvair starter to the VW transaxle for reverse ring gear kits. Offsets starter to mate with 127 tooth ring gear

Offset Starter Kit Order #5002

Offset Bushing only Order #5002-2

CORVAIR/VW STARTER RING GEARS

These ring gears are made to fit the 5003 flywheels. You will need to choose the correct ring gear to mate with the starter used. The reversed ring gear kit requires the Corvair starter adapted to the VW transaxle. The offset starter kit requires 127 tooth ring gear. The VW 6 volt starter requires 109 tooth. The VW 12 volt starter requires 130 tooth. The Corvair starter with concentric adaptor requires 130 tooth.

Order #5003-1 127 tooth
#5003-2 130 tooth
#5003-3 109 tooth



Selection Tip: For reverse rotation engine the best starter combination is a 12 volt VW starter drive with 6 volt windings. This makes a very high torque starter when 12 volt battery is used.

REVERSE BELT GUIDE



With a reverse rotation Corvair the slack side of the belt is on the alternator side. This guide keeps the belt tracking properly. It is included with the Reverse Engine Kit #5152.

Order #5206

V.W. THROW OUT BEARINGS

You will need a good heavy duty throw out bearing with your adaptor kit.

The bearing with round mounting lugs is for use with '70 and earlier type clutch with release pad.

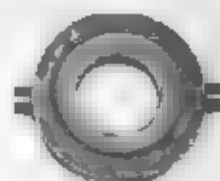
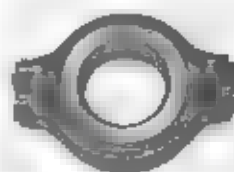
The bearing with flat spring retainers is for '71 and later clutches which have three release fingers.

'70 and earlier

'71 and later

Order #5006-E

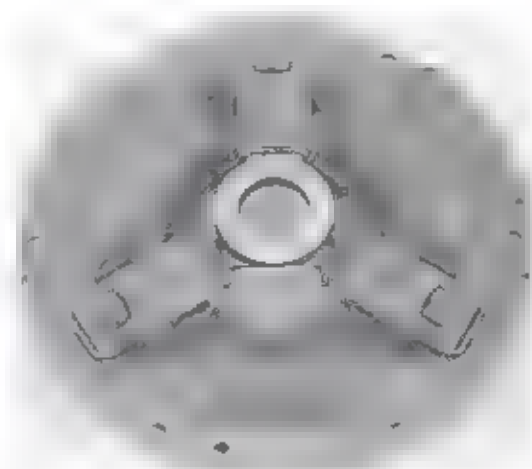
Order #5006-L



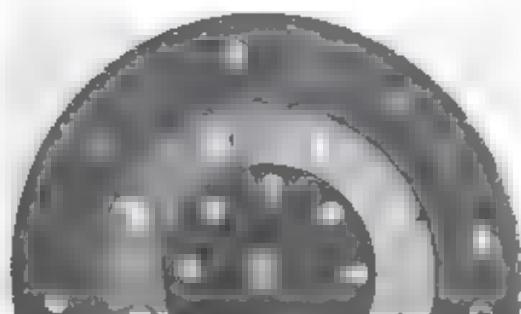
VW PRESSURE PLATE

OTTO PARTS offers these remanufactured 200mm pressure plates to meet even the most demanding applications. With the proper combination of pressure plate, disc and flywheel, you will have a reliable positive clutch. If you want to be sure you are getting the proper combination call us. We will need to know: Car weight, type of use and a description of engine mod's. 5004-A is adequate for all but the hottest applications.

Specify Early 1970 & Earlier/Late 1971 & Later
 1700 lb Standard with Kit Order #5004-A
 1900 lb Okay to sub with Kit Order #5004-B
 2200 lb Competition Only Order #5004-C



STOCK VW DISC



A new disc with durable facing. This is the standard disc in Corvair/VW Kits. Will give good service in regular street use with Pressure Plate #5004-A (1700 lb.) Not for use with -B or -C Pressure Plate. If you want a smooth performance clutch that can take punishment see "Smooth-Loc" Disc #5005-A.

Stock VW Disc

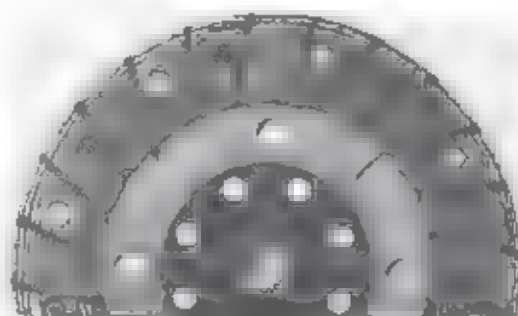
Order #5005

SMOOTH-LOC VW DISC

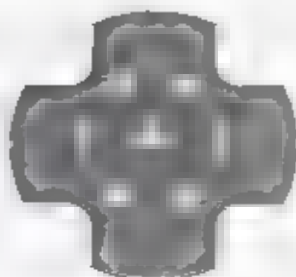
A performance designed disc that can provide both smooth operation for street use and positive lockup when you turn on the power. The bonded high-temp facing will give excellent service for hard driven buggies or cars. Use the 1700 lb. Pressure Plate #5004-A for slightly modified 140 s. Use 1900 lb. Pressure Plate for highly modified engine and drag type use.

Smooth-Loc VW Disc

Order #5005-A



SPRING-LOC CERAMIC DISC



The Spring-Loc Disc offers positive lockup under all conditions, with much less pressure than full face organic discs. They do not heat fade and they will lockup even when wet. The spring loaded hub absorbs shock and preloads the transaxle. The 5004-A pressure plate with this disc will lockup where much heavier pressure plates with full face discs failed.

Spring-Loc Ceramic Disc

Order #5005-B

**OTTO
PARTS**

CORV-8 CONVERSION



THE CORV-8 is not a "quick and dirty" week-end swap to gain a little horsepower. It is instead, a complete package of joined together, available components to give the end result of the best handling, quickest and safest, high speed road machine we know of. By keeping the essentially stock looking Corvair body, the car doesn't attract the unfavorable attention of the law, something generally encountered by owners of special-bodied, GT type kit cars.

This is not a vehicle for a novice driver, nor will it appeal to those who wish nothing but slow and soft, over-stuffed chair comfort from their vehicles. When the conversion is complete, it is a superbly balanced unit which handles and performs better than anything that wears license plates.

When the Corv-8 conversion is complete, you will have a mid-engine, fully independent suspension sports GT package for the road, stock in appearance (if you wish), which performs like a "Camel GT" road racer.

The '65 and later Corvair lends itself to this conversion for several reasons:

The fully independent suspension has excellent geometry for quick, sure handling and the transaxle package is ideal for the V-8 engine. The back seat area is more than adequate for mid-engine V-8 placement. In addition, the Corvair features transmission parts which are common to the General Motors V-8 line. And best of all, by simply bolting the Chevy V-8 engine to the front of your Corvair transaxle, you are not hassled with having to make internal modifications to trans or engine to get them to rotate together. Yes, you can convert to Chevy V-8 power without having to reverse the engine.

When the prototype Corv-8 was weighed it carried half a tank of gas, no spare tire and tipped the scale at about 3000 pounds. With a used 327, 350 hp (stock cast headers and running quiet mufflers) the car ran 105 mph in 12.22 for the quarter mile. The car is extremely stable under full power application. And it is interesting to note, both wheel spin and "end-swapping" were at a minimum (due to the low polar moment weight concentration just ahead of the rear wheels). It is no accident that today's racing machines are built along these same lines.

In order to install a V-8 engine (283-327-427) in a late '65 with a '66 or later 4-speed transmission, or '66 or later Corvair, it is necessary to remove the engine and transaxle, cut holes in the floor for the fan and engine air, and in the front trunk space for ducting radiator air flow. This is quickly done with an air chise.

The special input shaft #4002 replaces the Corvair clutch gear and is installed with special main shaft and bearings #4003, to provide for power input from the front of the transmission.

The adapter plate #4001 mounts the nose of the Corvair transmission to the V-8 bell housing. The standard Corvair cross member is retained and bolts directly to the #4001 adapter to support the front of the transaxle and rear of the engine. The front of the engine mounts to the sub frame #4007 with stock mounts. The rear of the transaxle is supported by rear transaxle mount kit #4006.

With this set up everything rotates in the right direction. Standard flywheel and clutch for the V-8 are used.

Clutch and brake hook-up is effected by the use of any hydraulic brake and clutch kit. These parts you will have to dig up on your own, by buying them new or scrounging them up in a wrecking yard.

The alternator is bolted to the lower left front of the engine by the alternator bracket (#4014). Wiring is handled by extending the original wiring to the new locations. Wiring instructions are provided in the installation instructions. The tachometer works with the V-8 engine the same way as it was connected to the Corvair engine. There is a potentiometer inside the gauge itself, which is adjusted while comparing the reading with a previously calibrated meter temporarily hooked up.



4005 Shift Linkage

4003 Main Shaft & Bearings

**OTTO
PARTS**

The combination vacuum and pressure gauge may be hooked into the V 8 engine intake manifold so engine vacuum may still be monitored, just as it would with the Corvair engine. A head temperature warning light may be hooked up to enable you to monitor conditions in the engine compartment. A water temperature gauge is a necessity. A single gauge unit or a three-gauge cluster combining water, oil and amps are available at most auto parts stores. This unit locates at the lower center of the dash.

The gear shift rod and tube must be cut and fastened to the shift linkage (#4005) which extends around the pan and flywheel to the shifter rod at the front of the transaxle. Refer to installation manual for correct hook up procedures.

Water pipes, hoses and radiator are hooked up after cutting appropriate holes and by fabricating the necessary radiator brackets and water pipes. We recommend a heavy duty radiator. This you can scrounge up from a wrecking yard, but our recommendation is to have a 4-inch core unit fabricated by a competent radiator shop. A radiator which measures two feet square is a perfect fit for the space available in the front trunk.

All the General Motors parts needed for the conversion are listed in the installation instructions and are available from a Chevrolet dealer on a special order basis. We do not carry these parts.

The big block 396 and 427 engines can be used to build a Corv-8, but we suggest you consider the following factors: there will be less seat room, some additional cooling problems, greater danger of ring and pinion breakage, and many other inconveniences. The small block engine (327-350) is the recommended engine.

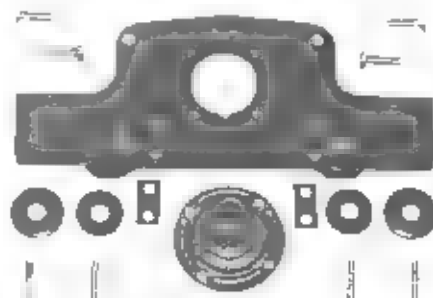
The conversion is straightforward, but we would be the last to tell you that it puts itself together; because it doesn't. A mechanically inclined person should be able to do the job within a reasonable time span by carefully planning the work and equipping oneself with the proper tools. A considerable amount of time can also be saved by chasing down and cleaning up special parts prior to actual construction. The kit covers the basic making and mounting of engine and transaxle into the '65 and later Corvair. Ancillary parts need to be fabricated by you, as outlined in the instructions: — Rear Transaxle Mount, Center Seatbelt Mount, Slave cylinder bracket, water pipes, throttle linkage, master brake, clutch, and engine cover. You will also need to locate seats.



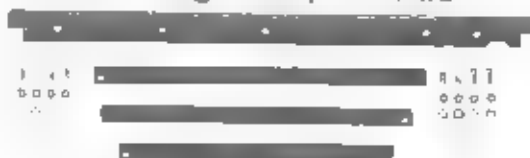
4002 Input Shaft & Shim



4007 Sub Frame



4001 Engine Adapter & Hwd



4006 Transaxle Mount Kit

CORV-8 PARTS

- 4101 Basic Adapter Kit
(includes 4001 4002 4003)
- 4001 Engine Adapter & Hwd
- 4002 Input Shaft & Shim
- 4003 Main Shaft & Bearings
- 4005 Shift Linkage
- 4006 Transaxle Mount Kit
- 4007 Sub Frame
- 4100 Corv-8 Manual
- 4014 Alternator Bracket
- 4018 Headers

**OTTO
PARTS**

CAM SELECTION FORM

Engine _____ Year _____ Model _____

Engine Displacement _____ Length of Stroke _____

Are Cylinder Heads from 140 H.P.? Yes ☐ No ☐

Compression Ratio _____

Type of Carburetors _____ Number of Venturis _____

Size of Venturis _____

Turbocharged? Yes ☐ No ☐ Type of Turbocharger _____

Boost Pressure if Turbocharged _____

Transmission: 3 Speed _____ 4 Speed _____ Automatic _____

Differential Gear Ratio _____ Total Car Weight _____

Cam now used Make _____ Grnd _____

Explain application of car and performance objectives _____

SHIPPING CHART & RATES

OFFICIAL ZONE CHART

ZONE RATES ...

ZIP CODE FIVE DIGIT	UPS ZONE	ZIP CODE FIVE DIGIT	UPS ZONE
010089	8	600-639	7
100-199	8	640-648	6
200-299	8	650-652	7
300-339	8	653	6
350-359	7	654-659	7
360-364	6	656-676	6
365-367	7	677	5
368	6	678	6
369-372	7	679	5
373-379	8	680-692	6
380-384	7	693	5
385	8	700-708	7
386-397	7	710-711	6
400-402	7	712-717	7
403-4	8	718-719	6
420-424	7	720-725	7
425-426	8	726-738	6
427	7	739	5
430-458	8	740-776	6
460-466	7	776-777	7
467-468	8	778-789	6
469	7	790-791	5
470	8	792	6
471-472	7	793-794	5
473	8	795-796	6
474-479	7	797-799	5
480-497	8	800-838	5
498-499	7	840-863	4
500-504	7	864	3
505	6	865	4
506-507	7	870-871	5
508-516	8	873-874	4
520-560	7	875-884	5
561	6	890-891	3
562-567	7	893-898	4
570-58	6	900-915	2
582	7	916-939	3
583-588	6	940-949	4
590-591	5	950-953	3
592-593	6	954-961	4
594	5	970-974	5
595	6	975-976	4
596-599	5	977-986	5
		988-994	5

GROUND SERVICE								
ZONES								
WEIGHT IN LBS.	2	3	4	5	6	7	8	
10	2.25	4.32	2.48	4.55	2.50	4.57	2.54	
20	2.24	3.4	1.63	3.71	2.07	2.07	2.10	
30	3.2	4.0	1.60	3.65	2.16	2.06	2.07	
40	4.0	3.9	1.51	3.58	2.24	2.03	2.08	
50	4.9	3.8	1.43	3.51	2.32	2.02	2.10	
60	5.7	3.7	1.35	3.44	2.39	2.00	2.17	
70	6.5	3.6	1.27	3.37	2.47	2.00	2.24	
80	7.3	3.5	1.19	3.30	2.54	2.00	2.31	
90	8.2	3.4	1.11	3.23	2.62	2.00	2.38	
100	9.0	3.3	1.03	3.16	2.69	2.00	2.45	
110	9.8	3.2	0.95	3.09	2.77	2.00	2.52	
120	10.6	3.1	0.87	3.02	2.84	2.00	2.59	
130	11.4	3.0	0.79	2.95	2.92	2.00	2.66	
140	12.2	2.9	0.71	2.88	3.00	2.00	2.73	
150	13.0	2.8	0.63	2.81	3.08	2.00	2.80	
160	13.8	2.7	0.55	2.74	3.16	2.00	2.87	
170	14.6	2.6	0.47	2.67	3.24	2.00	2.94	
180	15.4	2.5	0.39	2.60	3.32	2.00	3.01	
190	16.2	2.4	0.31	2.53	3.40	2.00	3.08	
200	17.0	2.3	0.23	2.46	3.48	2.00	3.15	
210	17.8	2.2	0.15	2.39	3.56	2.00	3.22	
220	18.6	2.1	0.07	2.32	3.64	2.00	3.29	
230	19.4	2.0	0.00	2.25	3.72	2.00	3.36	
240	20.2	1.9	0.00	2.18	3.80	2.00	3.43	
250	21.0	1.8	0.00	2.11	3.88	2.00	3.50	
260	21.8	1.7	0.00	2.04	3.96	2.00	3.57	
270	22.6	1.6	0.00	1.97	4.04	2.00	3.64	
280	23.4	1.5	0.00	1.90	4.12	2.00	3.71	
290	24.2	1.4	0.00	1.83	4.20	2.00	3.78	
300	25.0	1.3	0.00	1.76	4.28	2.00	3.85	
310	25.8	1.2	0.00	1.69	4.36	2.00	3.92	
320	26.6	1.1	0.00	1.62	4.44	2.00	3.99	
330	27.4	1.0	0.00	1.55	4.52	2.00	4.06	
340	28.2	0.9	0.00	1.48	4.60	2.00	4.13	
350	29.0	0.8	0.00	1.41	4.68	2.00	4.20	
360	29.8	0.7	0.00	1.34	4.76	2.00	4.27	
370	30.6	0.6	0.00	1.27	4.84	2.00	4.34	
380	31.4	0.5	0.00	1.20	4.92	2.00	4.41	
390	32.2	0.4	0.00	1.13	5.00	2.00	4.48	
400	33.0	0.3	0.00	1.06	5.08	2.00	4.55	
410	33.8	0.2	0.00	0.99	5.16	2.00	4.62	
420	34.6	0.1	0.00	0.92	5.24	2.00	4.69	
430	35.4	0.0	0.00	0.85	5.32	2.00	4.76	
440	36.2	0.0	0.00	0.78	5.40	2.00	4.83	
450	37.0	0.0	0.00	0.71	5.48	2.00	4.90	
460	37.8	0.0	0.00	0.64	5.56	2.00	4.97	
470	38.6	0.0	0.00	0.57	5.64	2.00	5.04	
480	39.4	0.0	0.00	0.50	5.72	2.00	5.11	
490	40.2	0.0	0.00	0.43	5.80	2.00	5.18	
500	41.0	0.0	0.00	0.36	5.88	2.00	5.25	
510	41.8	0.0	0.00	0.29	5.96	2.00	5.32	
520	42.6	0.0	0.00	0.22	6.04	2.00	5.39	
530	43.4	0.0	0.00	0.15	6.12	2.00	5.46	
540	44.2	0.0	0.00	0.08	6.20	2.00	5.53	
550	45.0	0.0	0.00	0.01	6.28	2.00	5.60	
560	45.8	0.0	0.00	0.00	6.36	2.00	5.67	
570	46.6	0.0	0.00	0.00	6.44	2.00	5.74	
580	47.4	0.0	0.00	0.00	6.52	2.00	5.81	
590	48.2	0.0	0.00	0.00	6.60	2.00	5.88	
600	49.0	0.0	0.00	0.00	6.68	2.00	5.95	

LBS. PER CUBIC FOOT			
1	2	3	4
1	1.00	1.00	1.00
2	1.00	1.00	1.00
3	1.00	1.00	1.00
4	1.00	1.00	1.00
5	1.00	1.00	1.00
6	1.00	1.00	1.00
7	1.00	1.00	1.00
8	1.00	1.00	1.00
9	1.00	1.00	1.00
10	1.00	1.00	1.00
11	1.00	1.00	1.00
12	1.00	1.00	1.00
13	1.00	1.00	1.00
14	1.00	1.00	1.00
15	1.00	1.00	1.00
16	1.00	1.00	1.00
17	1.00	1.00	1.00
18	1.00	1.00	1.00
19	1.00	1.00	1.00
20	1.00	1.00	1.00
21	1.00	1.00	1.00
22	1.00	1.00	1.00
23	1.00	1.00	1.00
24	1.00	1.00	1.00
25	1.00	1.00	1.00
26	1.00	1.00	1.00
27	1.00	1.00	1.00
28	1.00	1.00	1.00
29	1.00	1.00	1.00
30	1.00	1.00	1.00
31	1.00	1.00	1.00
32	1.00	1.00	1.00
33	1.00	1.00	1.00
34	1.00	1.00	1.00
35	1.00	1.00	1.00
36	1.00	1.00	1.00
37	1.00	1.00	1.00
38	1.00	1.00	1.00
39	1.00	1.00	1.00
40	1.00	1.00	1.00
41	1.00	1.00	1.00
42	1.00	1.00	1.00
43	1.00	1.00	1.00
44	1.00	1.00	1.00
45	1.00	1.00	1.00
46	1.00	1.00	1.00
47	1.00	1.00	1.00
48	1.00	1.00	1.00
49	1.00	1.00	1.00
50	1.00	1.00	1.00

APPROXIMATE FRACTION OF A POUND OVER THE WEIGHT SHOWN (BASED ON THE NEXT HIGHER PWT)

OTTO PARTS

TRANSVAIR BUS PRODUCTS

These kits put a '65 or later Corvair engine transmission differential in a '68 or later VW Bus Van or Camper. The smooth, reliable and economical Corvair powertrain transforms the bus, enabling it to easily keep up with traffic and loaf up mountain roads while delivering gas mileage comparable to the VW engine.

Bi-monthly engine overhauls are a thing of the past after the TRANSVAIR conversion. The Corvair engine has a much longer service life because it does not have to work as hard as the overstrained VW power unit. The strong Corvair gearbox and final drive allow the engine to loaf along at lower R.P.M.'s than the VW.

The kit includes all the little pieces and hardware that are needed to finish the conversion such as wiring and heater connectors. Installation of the kit is a snap. A floor jack and basic hand tools are required. An amateur mechanic can do the job in a week-end's time.

SEND \$2.00 FOR COMPLETE TRANSVAIR INFO PACKAGE



PRICE SHEET 1986

Part No.	Description	Page	Price	Weight
4022	Rear Stabilizer Bar w/Hardware	41		16 lbs
4023-E	Four Spider Differential '61-'64	43	125 00	5 lbs
4023-L	Four Spider Differential '65- 69	43	125 00	5 lbs
4023-1	Center Block & Shafts	43	35 00	1 lb
4023-2	Gears & Parts, 4 Spider Diff	43	100 00	2 lbs
4029	Front & Rear Handling Kit	41		45 lbs
4100	Corv-8 Manual	55	10 00	
4101	Basic Adapter Kit (includes: 4001, 4002, 4003)	55	455 00	25 lbs
5001	Corvair to VW Engine Adapter and Hardware	52	125 00	10 lbs
5001-7	Corvair to VW Pilot Bushing (same as PB-182)	22	3 00	4 oz
5002	Starter Adapter	53	25 00	2 lbs
5002-2	Offset Starter Bushing	53	5 50	2 oz
5003-S	Steel Corvair to VW Flywheel	52	80 00	18 lbs
5003-SL	Lightened Steel Flywheel	52	100 00	13 lbs
5003-1	127 Tooth Ring Gear	53	22 00	2 lbs
5003-2	130 Tooth Ring Gear	53	22 00	2 lbs
5003-3	109 Tooth Ring Gear	53	22 00	2 lbs
5004-A	1700 lb VW Pressure Plate (specify year)	54	55 00	9 lbs
5004-B	1900 lb VW Pressure Plate (specify year)	54	60 00	9 lbs
5004-C	2200 lb VW Pressure Plate (specify year)	54	80 00	9 lbs
5005	Stock VW Disc	54	15 00	3 lbs
5005-A	Smooth-Loc VW Disc	54	50 00	3 lbs
5005-B	Spring-Loc 4 Puck Ceramic Disc	54	55 00	3 lbs
5006-E	V W Throw Out Bearing, '70 & earlier	53	15 00	1 lb
5006-L	V W Throw Out Bearing, '71 & later	53	15 00	1 lb
5008	Throttle Linkage	51	8 25	1 lb
5101S	Basic Adapter Kit w/steel flywheel	51	223 00	26 lbs
5101SL	Basic Adapter Kit w/12 lb flywheel	51	238 00	20 lbs
5102S	Deluxe Adapter Kit w/steel flywheel	51	292 00	36 lbs
5102SL	Deluxe Adapter Kit w. 12 lb flywheel	51	307 00	30 lbs
5103	Corvair to VW Installation Manual	50	10 00	1 lb
5152-S	Reversed Engine Adapter Kit w/steel flywheel	51	277 00	36 lbs
5152-SL	Reversed Engine Adapter Kit w. 12 lb. steel flywheel	51	292 00	30 lbs
5206	Reverse Rotation Belt Retainer	53	10 00	1 lb
HP Book	How to Hot Rod Corvair Engines		10 00	1 lb
GM Manual	1961 Shop Manual		18 00	1 lb
GM Manual	1962-3 Supplement		12 00	1 lb
GM Manual	1964 Supplement		12 00	1 lb
GM Manual	1965 Shop Manual		18 00	1 lb
GM Manual	1966 Thru 1969 Supplements Price ea.		5 00	6 oz

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Part No.	Description	Page	Price	Weight
RB-195	Reverse Rotation Billet Cam	51	200 00	6 lbs
GS-196	Distributor Reversing Gears	51	50 00	1 lb
BH-197-C	Chrome Buggy Headers	39	100 00	19 lbs
BH-197-P	Plain Buggy Headers	39	75 00	19 lbs
MI-197	Muffler Inserts, Buggy Headers	39	18 00	8 lbs
CS-198-A/S	Case Studs Upper or Lower (each)	25	5 00	3 oz
CS-198-A/S	Case Studs Upper or Lower (set of 24)	25	108 00	4 lbs
CS-198-T	Tap for Case Thread A/S		10 00	6 oz
AB-199	'60- '62 or '63- '64 Axle Bearing	42	85 00	2 lbs
FA-200	Spin on Filter Adaptor	25	16 50	1 lb
PA-201	Oil Pressure Adaptabolt	25	8 00	8 oz
AR-202	Alternators, Rebuilt	(Core \$12 00)	22 00	12 lbs
GR-203	Generator, Rebuilt	(Core \$10 00)	31 00	23 lbs
SR-204	Starter, Rebuilt	(Core \$10 00)	23 00	15 lbs
RS-205	Solenoid, Rebuilt	(Core \$2 00)	10 00	3 lbs
MD-206	Spring Loaded, High Temp. Clutch Disc	19	45 00	4 lbs
MP-207	Modified Pressure Plate	(Core \$35 00)	42 00	22 lbs
RG-207	Starter Ring Gear		20 00	1 lb
SP-208	Stock Pressure Plate	(Core \$35 00)	40 00	22 lbs
RD-209	Stock Clutch Disc	(Core \$10 00)	25 00	3 lbs
CD-210	Four Puck Ceramic Disc w/spring hub	20	55 00	3 lbs
SC-211	Six Puck Ceramic Disc, w/spring hub	20	65 00	3 lbs
AH-212-E	'60- '64 Alum Fan Bearing Hub Ass'y	28	25 00	2 lbs
AH-212-L	'66- '69 Alum Fan Bearing Hub Ass'y	28	27 00	2 lbs
BH-213-E/L	Install Hub in Top Cover	(Core \$20 00)	12 00	5 lbs
CR-214	6 Connecting Rods Reconditioned	(Core \$45 00)	70 00	6 lbs
CR-214-B	Balance Con Rods End For End	23	30 00	—
PR-214	Press Rods Off and On Pistons		18 00	
CH-215	Car Headers, w/ex packing spec type heads	38	90 00	16 lbs
TM-216	Turbo Muffler	38	23 00	-
CO-217	Chrome Turbo Outlet	38	17 00	—
MS-218	Trans. Mainshaft '66- '69 3 & 4 speed	48	170 00	—
MS-219	Trans. Mainshaft, early 4 speed	(available in '86)	—	
CB-220	Needle Bearings (92) 7/84 x 3/4	48	40 00	6 oz
CB-221	Needle Bearings (54) 1/8 x 3/4	48	25 00	6 oz
FB-222	Needle Bearings (48) 1/8 x 1/2	48	21 00	6 oz
FB-223	Needle Bearings (72) 3/32 x 15/32	48	25 00	6 oz
CS-226-E	Counter Shaft '61-'65 4 speed	48	14 00	2 lbs
CS-226-L	Counter Shaft '66- '69 3 & 4 speed	48	15 00	2 lbs
FR-230	Washer Ring, Flywheel	21	4 00	8 oz
HH-231	Buggy Headers, High Style	39	100 00	19 lbs
MM-231	Megaphone Muffler Inserts (1 Pair)	39	30 00	5 lbs
MH-232	Muffled Buggy Headers	39	115 00	21 lbs
SH-233	Six Into 1 Rear Engine Headers	40	120 00	21 lbs
SM-233	Megaphone Muffler Insert	40	15 00	3 lbs
MH-234	Six Into 1 Mid Engine Headers	40	120 00	21 lbs
SB-560	OTTO Parts Super Belt for use w/stock pulley	26	12 00	1 lb
SB-560-2	OTTO Parts Super Belt for use w/stock pulley	26	2/22 00	1 lb
SB-580	OTTO Parts Super Belt for use w/Inc pulley	26	12 00	1 lb
SB-580-2	OTTO Parts Super Belt for use w/Inc pulley	26	2 22 00	1 lb
4001	Engine Adaptor & Hwd	55	140 00	13 lbs
4002	Input Shaft & Shim	55	160 00	4 lbs
4003	Main Shaft & Bearings	55	180 00	7 lbs
4005	Shift Linkage	55	70 00	4 lbs
4006	Transaxle Mount Kit	55	45 00	35 lbs
4007	Sub Frame	55	200 00	35 lbs
4014	Alternator Bracket	55	20 00	2 lbs
4018	Headers	55	155 00	32 lbs
4021	Front Bar & Hardware	41		16 lbs
4022-12	Lower Control Arm Bracket	41	30 00	5 lbs

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Part No.	Description	Page	Price	Weight
PP-153	Late TRW Forged Pistons with Pins (64-69)	17	140.00	9 lbs
MR-154	Ramco Moly Piston Rings	16	60.00	1 lb
TH-155	Total Seal High Performance Rings	16	60.00	1 lb
TP-156	Total Seal Pro Set Rings	16	99.00	1 lb
IS-157	Differential Input Shaft Seals (each)	45	2.75	6 oz
RT-158	New Push Rod Tubes (each)	12	4.50	4 oz
BK-159	Shakeproof Bolt Kit	5	6.50	12 oz
BK-159-2	Shakeproof Bolt Kit (Two Sets)	5	10.00	2 oz
SS-160	Valve Spring Shims	9	6.00	4 oz
SS-160-OS	Oversize Valve Spring Shims	9	6.00	4 oz
LK-161-A	64-69, Ramco Moly Rings and TRW Pistons (Core \$90.00)	18	260.00	10 + 31 lbs
LK-161-B	64-69, Total Seal HP Rings and TRW Pistons (Core \$90.00)	18	260.00	10 + 31 lbs
LK-161-C	64-69, Total Seal Pro Rings and TRW Pistons (Core \$90.00)	18	295.00	10 + 31 lbs
EK-161-A	60-63, Ramco Moly Rings and Cast Pistons (Core \$90.00)	18	245.00	10 + 31 lbs
EK-161-B	60-63, Total Seal HP Rings and Cast Pistons (Core \$90.00)	18	245.00	10 + 31 lbs
PR-162	Tailored Push Rods (specify amount U/S)	10	60.00	3 lbs
RA-163	Mated Rocker Arm Sets (12)	10	61.00	4 lbs
PW-164	High Performance Plug Wires	37	20.00	2 lbs
HC-165	Allison Coils	36	25.00	3 lbs
RC-165	Racing Coil	36	30.00	3 lbs
PD-166	Precision Distributor (Core \$15.00)	35	80.00	3 lbs
PD-166-T	Precision Distributor for Turbos (Core \$15.00)	33	85.00	3 lbs
EI-167	Allison Electronic Ignition System	36	70.00	2 lbs
GD-167	Includes EI-167 & HC-165	36	88.00	5 lbs
GS-168	4:11 Ring & Pinion Gear Set	46	180.00	7 lbs
GS-168-T	W/Special Heat Treat, High Shock Loads	46	200.00	7 lbs
PS-169	Pinion Shafts (65-69)	45	155.00	3 lbs
AF-171-A	4 x 1 Air Filter Kits	31	108.00	8 lbs
AF-171-B	140 Air Filter Kits	31	108.00	8 lbs
KK-172-A	4 x 1 Carb Kit	31	150.00	4 lbs
KK-172-B	140 Carb Kit	32	150.00	4 lbs
CR-173	Carb Rebuilding Kits	30	8.20	8 oz
BG-174	Copper Cylinder Base Gaskets (set of 6)	17	10.00	6 oz
IS-175-A	Input Shaft 66-69 3 & 4 speeds	45	105.00	4 lbs
IS-175-B	Input Shaft 64-65 4 speeds	45	105.00	4 lbs
IS-175-C	Input Shaft 61-63 4 speeds	45	105.00	4 lbs
MF-176	Taper Bolt Flywheel (Core \$30.00)	21	80.00	14 lbs
IV-177	140 Intake Valves (each)	12	7.50	8 oz
EV-178	140 Exhaust Valves (each)	12	17.25	8 oz
IV-179	110 and all early intake valves (each)	12	6.00	8 oz
EV-180	110 and all early exhaust valves (each)	12	12.75	8 oz
PB-182	Pilot bushing	22	3.00	4 oz
DG-183	Differential Gasket Set (specify year)	46	15.00	1 lb
GS-183-1	Top Cover Gasket	46	1.50	
GS-183-2	Trans-Diff. (specify year)	46	1.50	
GS-183-3	Axle Yoke Seals	46	3.00	
GS-183-4	Viton "O" Rings, Adj-Sleeve (1 Pair)	46	4.00	
DM-184-140	Dual Muffler Kit	38	90.00	28 lbs
DM-184-110	Dual Muffler Kit	38	85.00	28 lbs
MS-185-L	Muffler Band, L.H. 18"	38	3.00	4 oz
MS-185-R	Muffler Band, R.H. 20"	38	3.00	4 oz
PB-186	Pinion Bearing	46	19.00	1 lb
SB-187	Carrier Bearing (side bearing)	46	15.00	1 lb
TG-188-E	Transmission Gasket Set '61-'65	49	6.50	8 oz
TG-188-L	Transmission Gasket Set '66-'69	49	6.50	8 oz
PS-189	Pinion Shim Set	46	4.00	2 oz
TC-190	Collar, Throw out Bearing	45	22.00	1 lb
WM-191	3 Barrel Weber Manifold	33	250.00	11 lbs
WC-192	40 IDA-3 Weber Carburetors	33	540.00	18 lbs
WF-193	Weber Air Filters	33	80.00	6 lbs

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Part No.	Description	Page	Price	Weight
OR-114	Viton O-Ring Seals for Push rod tubes	14	11.00	3 oz
OR-114-2	Viton O-Ring Seals for Push rod tubes	14	20.00	4 oz
OR-114-5	Viton O-Ring Seals Five Engine Sets, Bulk Pac	14	45.00	6 oz
OR-114-0	Viton O-Ring Set w/Oil Cooler Seals	14	13.00	3 oz
RG-115	Reground Cams, all (Core \$15.00)	7	53.00	6 lbs
PB-116	Profferal Billet Cams, all	7	104.00	6 lbs
HT-117	Hydraulic Tappets (12)	7	35.00	3 lbs
DS-118	Stock Valve Springs w/Dampers (12)	8	20.00	2 lbs
DS-118-HP	Performance Valve Springs w/Damper	8	28.00	2 lbs
TW-119	Cam Thrust Washer & Key	11	2.50	6 oz
VL-120	Valve Locks (12)	7	6.00	3 oz
TL-122	Heat Treated Valve Locks (12)	7	8.00	5 oz
OS-123-HP	High Lift Dual Valve Springs	8	55.00	2 lbs
OS-123-C	Spring Seat Cutter Deposit \$45.00	Rental	8.00	1 lb
OS-124	Oversize Alum. Spring Retainers	9	26.00	5 oz
NG-125	Non G.M. Cam Gear	11	27.00	1 lb
GI-125	Install Standard Cam Gear (Includes TW-119)	11	9.50	—
GI-126	Install Failsafe Cam Gear (Includes TW-119)	11	10.50	—
FS-126	OTTO Parts Failsafe Cam Gear	11	50.00	1 lb
OP-126	Oil Pick Up	2	23.00	1 lb
OP-127	Oil Pick Up	2	23.00	1 lb
OP-128	Oil Pick Up	2	23.00	1 lb
SH-129	Stock Crank Hub and gasket (not G.M.)	22	35.00	3 lbs
CI-130	Carb Base Insulators (each)	29	1.25	4 oz
CI-130-4	Carb Base Insulators (set of 4)	29	4.00	6 oz
GI-130	4 Insulators w/8 Gaskets	29	7.50	6 oz
EG-131	Exhaust Guides (6)	13	24.00	10 oz
IG-131	Intake Guides (6)	13	24.00	10 oz
GT-131	Guide Installation Tools Deposit \$40.00	Rental	8.00	1 lb
EG-131-10	Oversize Exhaust Guides (each)	13	4.75	2 oz
IG-131-10	Oversize Intake Guides (each)	13	4.75	2 oz
IT-131-R	Reamer for Oversize Guides Deposit \$40.00	Rental	8.00	1 lb
BS-133	Baffle Spacer Kit	2	60.00	6 lbs
RB-134	Standard Rod Bearings	23	23.00	1 lb
RB-134-OS	Oversize Rod Bearings (.001, .010, .020, .030)	23	29.00	1 lb
MB-135	Standard Main Bearings	23	40.00	1 lb
MB-135-OS	Oversize Main Bearings (.001, .010, .020, .030)	23	48.00	1 lb
CA-136	Lower Control Arms (pair) (Core \$30.00)	41	80.00	15 lbs
CN-137	Carb Flange Nuts (set of 4)	29	2.00	6 oz
CN-137-2	Carb Flange Nuts (2 set of 4)	29	3.50	12 oz
RB-138	Con Rod Nut and Bolt Kit (set of 12)	23	24.00	2 lbs
RN-138	Con Rod Nuts Only (set of 12)	23	4.50	6 oz
FB-139	Flywheel to Crank Bolts (set of 6)	22	3.00	5 oz
FB-139-A	Automatic Converter Plate to Crank	22	5.50	5 oz
OF-140	Fram Oil Filter	30	5.80	1 lb
QS-141	Quick Shift Kit (specify year)	42	22.00	3 lbs
CH-142	Super Bolt Crank Hub (specify year)	22	54.00	2 lbs
PB-143	Pressure Plate Bolts w/Lock Washers (set of 6)	19	3.00	5 oz
PS-144	Positraction Preload Spacers (+.020)	—	10.00	8 oz
CJ-145	Carburetor Main Jets (two)	30	4.00	5 oz
FB-146-E	Early Blower Fan Bearing (60-64) Rebuilt (Core \$5.00)	28	20.00	3 lbs
FB-146-L	Late Blower Fan Bearing (65-69) Rebuilt (Core \$5.00)	28	22.00	3 lbs
TB-147-E	Early Release Bearing (60-63)	21	18.00	2 lbs
TB-147-L	Late Release Bearing (64-69)	21	18.00	2 lbs
TB-147-LH	H.D. Self-Aligning Release Bearing (64-69)	21	22.00	2 lbs
FP-148	Incremental Fan Pulley w/Super Belt (60-64)	27	30.00	2 lbs
FP-149	Incremental Fan Pulley w/Super Belt (65-69)	27	32.00	2 lbs
AS-150	Rocker Arm Studs N.O.S. (used only available)	10	1.00	2 oz
FN-151	Friction Nuts for Rocker Arm Studs (set of 6)	12	3.60	6 oz
CP-152	Early Cast Pistons with Pins (60-63)	17	124.00	9 lbs

OTTO PARTS

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9859 REMER STREET
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PRICE SHEET 1986

Part No.	Description	1-86/50851.37	Page	Price	Weight
PG-024	Spider Gear		44	13.50	4 oz
SG-025	Differential Side Gear		44	25.00	8 oz
CS-027	Spider Gear Cross Shaft		44	4.50	6 oz
TW-028	Thrust Washer, Side Gear		44	1.50	1 oz
CW-029	Cup Washer, Spider Gears		44	1.00	1 oz
SK-045	S U Carb Adapter for Turbo		32	55.00	3 lbs
AP-070	Aluminum Crankshaft Pulley (will reproduce in 86)		36		2 lbs
OS-101	OTTO Oil Pan with gasket and hardware		1	75.00	9 lbs
OD-101	Includes OS-101 & OP-126			91.00	9 lbs
RC-102-4	Rocker Arm Covers (4 holes) with gaskets & hardware		3	58.00	8 lbs
RC-102-6	Rocker Arm Covers (6 holes) with gaskets & hardware		3	60.00	8 lbs
	with Polished Fins add			3.00	
PR-103	Fuel Pressure Regulator		30	10.00	3 lbs
FS-104	Flywheel Housing Spacer			6.00	2 oz
HG-106-032	Copper Head Gaskets thickness .032		15	14.00	4 oz
HG-106-.042	Cooper Head Gaskets thickness .042		15	15.00	4 oz
HN-107	Head Nuts (set of 12)		15	5.00	6 oz
HN-107-2	Head Nuts (2 sets of 12)		15	8.50	12 oz
PF-108	Pro-Flow Oil Pump Kit		8	48.00	2 lbs
IP-109	Stock Idler Pulley (rebuilt) (Core \$10.00)		28	25.00	2 lbs
IB-109-1	Bearing Only		48	10.00	1 lb
BG-110-4	Carb Base Gaskets (set of 4)		29	2.50	1 oz
BG-110-18	Carb Base Gaskets (set of 18)		29	8.00	2 oz
BG-110-25	Carb Base Gaskets (set of 25)		29	10.00	3 oz
TI-110	Spark Plug Thread Inserts (Tools required)		24	6.00	2 oz
TI-110-T	Spark Plug Thread Insert Tool Deposit \$50.00	Rental		8.00	2 lbs
CG-111	Rocker Cover Gaskets (1 pair) (specify type)		5	4.50	4 oz
CG-111-3	Rocker Cover Gaskets (3 pair) (specify type)		5	11.50	1 lb
PG-111	Oil Pan Gasket (each) (specify type)		5	3.75	4 oz
PG-111-3	Oil Pan Gaskets (three) (specify type)		5	9.50	12 oz
RS-112	Complete Engine Gasket Set		14	65.00	3 lbs
SG-112-1	Oil Cooler Adaptor		14	1.00	
SG-112-2	Oil Filter Adaptor		14	1.00	
SG-112-3	Distributor		14	1.00	
SG-112-4	Turbo Inlet		14	1.00	
SG-112-5	Oil Pump (2)		14	1.00	
SG-112-6	Oil Cooler Seals, Viton		14	2.00	
SG-112-7	Top Cover, Pair Only		14	3.00	
SG-112-8	Rear Housing		14	1.80	
SG-112-9	Bell Housing		14	1.50	
SG-112-10	Ex Manifold Packing (8) 140		14	5.50	
SG-112-11	Ex Manifold Packing (8) others		14	8.00	
SG-112-12	Bell Housing Seal (large)		14	11.00	6 oz
SG-112-13	Rear Housing Seal (small)		14	9.00	4 oz
SG-112-14	Cylinder Base (8)		14	9.00	
SG-112-15	Oil Filler Cap		14	1.00	
SG-112-16	Right Angle Adaptor		14	1.00	
SG-112-17	Crank Gear Gasket		—	1.00	
SI-113-A	1/4-20 Inserts, spec. long or short		24	.60	10/4 oz
IT-113-A	1/4-20 Installation Tools Deposit \$25.00	Rent		8.00	1 lb
SI-113-B	5/16-18 Inserts, spec. long or short		24	.70	10/4 oz
IT-113-B	5/16-18 Installation Tools Deposit \$27.00	Rent		8.00	1 lb
SI-113-C	3/8-18 Inserts, spec long or short		24	.80	10/6 oz
IT-113-C	3/8-18 Installation Tools Deposit \$29.00	Rent		8.00	1 lb

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